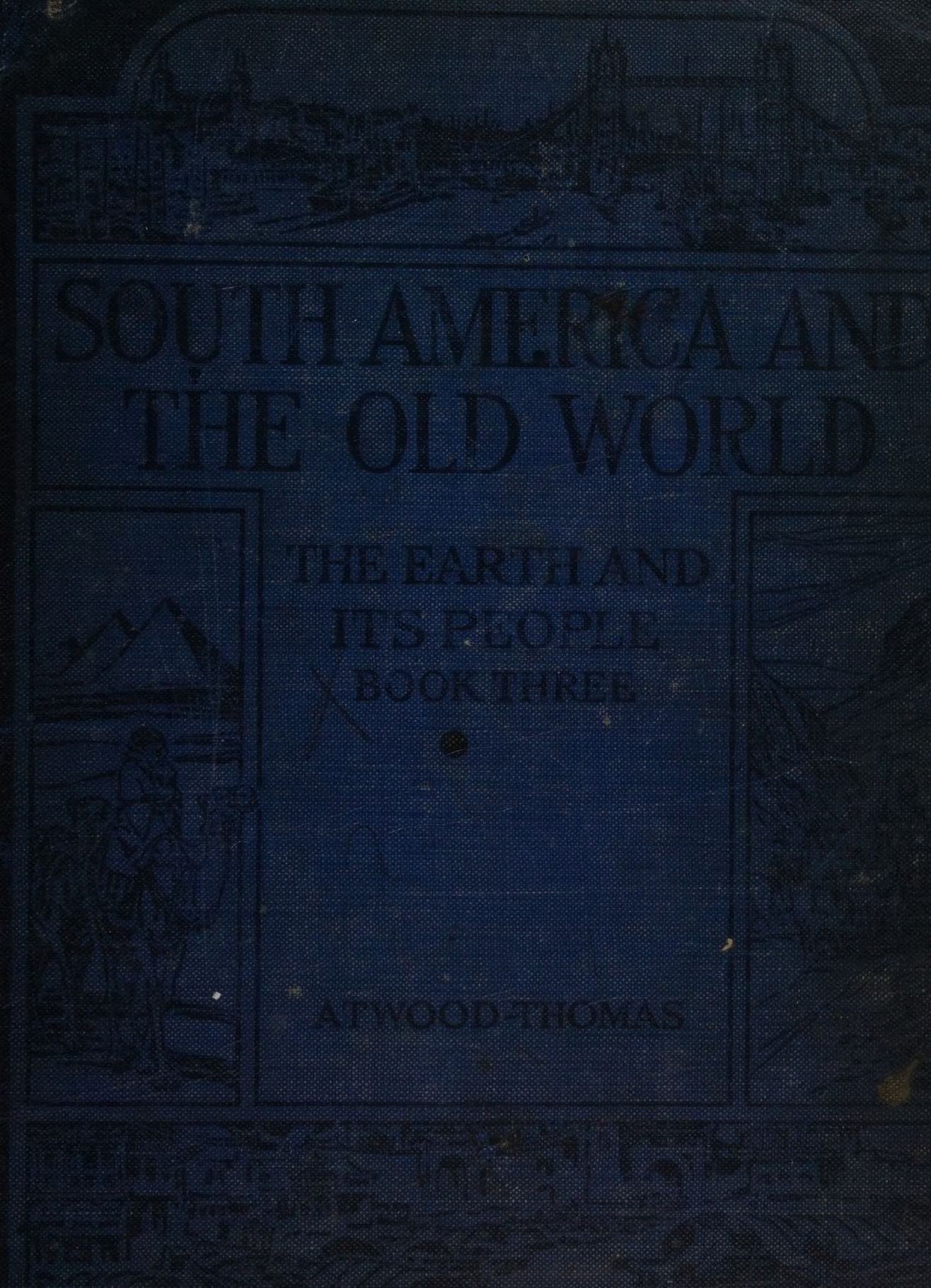


SOUTH AMERICA AND THE OLD WORLD

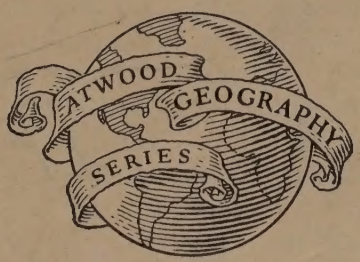
THE EARTH AND ITS PEOPLE
BOOK THREE

ATWOOD-THOMAS

THE EARTH AND ITS PEOPLE · BOOK THREE

SOUTH AMERICA AND THE OLD WORLD

BY
WALLACE W. ATWOOD
AND
HELEN GOSS THOMAS



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FOREWORD TO THE TEACHER

"South America and the Old World" is the third book of a new series of geographies on the single-cycle plan. The first book, "Home Life in Far-Away Lands," introduces pupils to geography through a series of imaginary journeys to distant lands. The second book, "Our State and Continent," opens with a full treatment of New York State prepared in accordance with the requirements of the syllabus published by the State Department of Education, and covers the study of the United States and the other countries of North America. "South America and the Old World" completes the study of the earth by countries and regions, covering, as the title indicates, South America and the continents of the Eastern Hemisphere.

In every problem of human geography there are two factors of equal importance: the people and the place. To understand the activities of any group of people, a clear picture of the place in which they live is essential. Hence the basic framework of "Our State and Continent" and "South America and the Old World" is regional, and the maps, pictures, and text combine to visualize for children the natural regions which form the stage setting for the activities of the people in all parts of the world.

The division of the lands into natural regions may be based on any one of several geographic factors, depending on the nature of the study to be pursued and the age and background of the students. The factor used in "Our State and Continent" and "South America and the Old World" is the surface of the land, because it is the simplest and the most easily visualized by children. Four simple types of natural regions suffice to classify land surfaces in a broad way: young, rugged mountains; old worn-down mountains; uplands and plateaus; lowlands and interior plains. Each type has its distinctive characteristics, and each exerts certain well-defined influences on the activities of people.

One of the greatest advantages in this regional classification is that it lends itself to consistent use throughout the world, and makes possible the effective use of correlated study. Throughout "Our State and Continent" and "South America and the Old World" similar regions are carefully correlated, and pupils are called upon constantly to apply knowledge in hand to the solution of new problems.

The value of the regional background cannot be too strongly stressed. It provides the "why" for the "what," and makes geography a series of stimulating problems in cause-and-effect relationships. It affords unlimited opportunity for the discussion of thought-provoking questions such as "Why is the Argentine Pampa one of the great food-producing regions of the world?" or "Why is Italy the most important of the Mediterranean countries?" A ten-minute discussion of this kind will do more to fix facts permanently in mind than an hour of old-fashioned book study.

The use of the regional method by no means implies neglect of political divisions. Each individual country receives due attention, and each one is illuminated against a vivid regional background.

One of the new and outstanding features of "South America and the Old World" is its treatment of the possessions of the European nations in close association with the home countries. The study of the British Isles is followed immediately by studies of the other parts of the British Empire in the Eastern Hemisphere. Similarly, the colonies of France, the Netherlands, and all other European countries which have outlying possessions are treated directly after the home country.

This procedure applies to the countries of Europe the plan which has been used so long and so successfully in connection with

the United States and its possessions. It is sound pedagogically and geographically, for the home countries and their possessions are so intimately interrelated that to be studied with full understanding they need to be presented in the closest possible association. For three years previous to the publication of this book, this new plan of organization has been tried out in the schools of one of the large Eastern cities. The teachers who have been using it report that it conserves time, quickens interest, and gives pupils a keener appreciation of the relationships between the home countries and the possessions than has ever been attained under the old plan of dissociated study.

Like the other books in the series, "South America and the Old World" is divided into convenient units of study, each of which is introduced by a motivated approach which challenges the interest of the pupil and gives him an objective toward which to work. The motivation takes a variety of forms according to the subject matter of the study units. Many of the approaches present problems for solution, and many call for some form of self-activity on the part of the pupil.

Each study unit closes with exercises or tests which enable the pupil to prove his knowledge of the important geographic facts and relationships which he has discovered. Much time and thought have been given to making the tests varied and interesting, and many suggestions are offered for extra work for pupils who work faster than the average of the class.

The maps provide the pupil with a rich field for the discovery of facts of physical, economic, and political geography. Each study unit calls for thoughtful map-reading, and throughout the book map work and text study are intimately interwoven. One of the most valuable features of the maps is the showing of product data against the regional background, whereby the pupil is constantly reminded of the association of certain kinds of economic activity with certain types of regions.

In order to save the time ordinarily wasted by pupils in hunting blindly for places on maps, every map is indexed in atlas style, and wherever in the text the pupil is directed to locate a place on a map, the index is given.

Every picture in the book has been selected for the purpose of playing a definite rôle in the visualization of the lesson units, and every one is an integral part of the plan of study. The pictures are provided with legends which include descriptions, explanations, and questions, and which greatly increase their usefulness.

The vocabulary has been checked by a graded word list prepared by Dr. B. R. Buckingham and Dr. E. W. Dolch. This graded word list contains about 20,000 entries. In making it, fifteen published and unpublished vocabulary studies were combined and then supplemented by original material secured from more than 16,000 children. The returns from this independent investigation were used to fill in the many gaps which were evident even after the fifteen previous studies had been combined. Finally, the graded word list was organized on the basis of meanings rather than on the basis of word forms. Not infrequently one meaning of a given word was found to be suitable for a primary grade, while another meaning of the same word might belong to a much higher grade.

A comparison of the text of "South America and the Old World" with this graded word list gives assurance that its vocabulary is well within the grasp of the pupils for whom the book is intended. Wherever words likely to be new to pupils are introduced, they are explained; and avoidance of reading difficulties leaves the pupils free to give their undivided attention to the subject matter.

The authors of this series believe that the highest function of geographical study is to break down the barriers of provincialism and to foster in American youth a just and sympathetic attitude toward the people of other countries and their problems. The books are offered to the schools in the earnest hope that they may play a worthy part in training boys and girls in the Empire State for intelligent and broad-minded citizenship.

WALLACE W. ATWOOD
HELEN GOSS THOMAS

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SOUTH
AMERICA
Scale of miles
0 200 400 600 800
Water less than 500 feet deep
Floating ice
Grasslands and cultivated areas
Temperate forests
Tropical forests
Semideserts, deserts, and barren mountain slopes

SOUTH AMERICA AND THE OLD WORLD

SOUTH AMERICA

I. THE LAND AND THE PEOPLE

1. Foreword

Exploration and settlement. Have you ever read stories of Cortez, Pizarro, or Balboa? These men were three of the great Spanish explorers and conquerors who won for Spain the southern part of North America and much of South America after Columbus discovered the New World. For a long time the lands that the Spanish settled were colonies of Spain. Then, one by one, they gained their freedom and became independent countries. Today there are nine Spanish-American countries in South America. In these countries the people speak the Spanish language.

But in Brazil, the largest country of South America, the people speak the Portuguese language. Perhaps you can guess why. Portugal and Spain are neighboring countries of Europe, and in the time of Columbus the Portuguese, as well as the Spanish, were great explorers. Eight years after Columbus's first voyage a Portuguese sea captain named Cabral landed on the coast of what is now Brazil and claimed it for Portugal. Later the Portuguese explored and settled Brazil and made it a Portuguese colony. Today Brazil is an independent country.

Countries which have grown slowly. Long before the English settled in North America there were good-sized Spanish and Portuguese settlements in South America. Yet in spite of an earlier start the South American countries have grown more slowly than the United States. In many of them most of the people still live near the seacoast. Many parts of the continent have no railroads, and some parts have never been fully explored.

The continent of opportunity. As a whole, South America is thinly populated, and there are vast stretches of land suitable for plantations, farms, and pastures which have not yet been used. Farming, stock-raising, and mining have been carried on since the earliest days of settlement, but much more could be done. People often call South America "the continent of opportunity" because there is a chance for many more people to make a good living there.

We are especially interested in the continent of South America because it is nearest our own, and because we carry on much trade with the people there. Many of our business men have invested money in South American mines, plantations, and ranches, and in that way we are taking part in the development of the resources of the continent.

Some problems. As you study about the South American countries, try to find reasons why they have not grown so fast as the United States. Try also to decide which countries are likely to grow the fastest in the future, and why.

Map studies. On the map on pages 382–383 find Spain and Portugal (*J2–3*). Then find the parts of South America which the Spanish and the Portuguese explored.

Figure 1. Mount Illimani, an old volcanic peak in the Andes. Illimani is in the torrid zone, but it is so high that its summit is covered with snow fields and glaciers. Find this peak on the map (pp. 24–25, *C5*). How does it compare in height with Mount Popocatepetl in Mexico and Mount Whitney in California?

2. Getting Acquainted with South America

Here are some questions which anyone who is acquainted with South America can answer. Can you answer them?

1. What are the highest mountains in South America, and where are they?
2. What plains in South America are like the Great Plains of the United States?
3. What part of South America should you visit if you wanted to explore a tropical forest?
4. What part of South America should you visit to enjoy summer weather at Christmas time?

Some comparisons between the Americas. Turn to the map on pages 378–379 and compare the shape of North America and South America. Notice that they are both widest at the north and that they grow much narrower toward the south. On the map find the equator, the tropic of Cancer, and the tropic of Capricorn. What part of North America is between the tropics? Is that the wider part of the continent or the narrower part? What part of South America is between the tropics? Is that the wider part or the narrower part? Which continent, then, has the greater area of tropical lands?

You will remember that as you go northward from the equator in all parts of the earth the climate gradually becomes cooler. When you reach the tropic of Cancer, you leave the torrid zone and enter the north temperate zone. The climate changes in the same way as you go southward from the equator. On such a trip, what zone do you enter as you cross the tropic of Capricorn? What part of South America is in the south temperate zone?

Study the map again, and decide which of the two Americas has the greater area of temperate lands. You have learned that white people find it hard to live and work in the hot, tropical lands. Which of the two Americas has more land where the climate is suited to people of the white race?

Where Christmas comes in the summer time. You know that in the torrid zone the people do not speak of winter and summer because the weather is warm the year round.

Courtesy of Joseph T. Singewald, Jr.

Figure 2. A native house on the Amazon River in Brazil. The picture shows how the thick tropical forest of the Amazon Lowlands looks from the river.

Courtesy of the Pan American Union

Figure 3. Cattle on the treeless Pampa of Argentina. Of what region in the United States does the Pampa remind you? Why are there no trees here?

You also know that in the north temperate zone, where you live, the winter months are December, January, and February, and the summer months are June, July, and August. In the south temperate zone the seasons are just the opposite of ours. There June, July, and August are the winter months, and December, January, and February are the summer months. Children who live in the southern part of South America have Christmas on December 25 just as you do, but their Christmas comes in the summer.

Map work. Now turn to page 4 and work out the map studies there.

More comparisons. The map shows that the natural regions of South America are arranged somewhat like those of North America. The Andes Mountains, in the west, are a southward extension of the young, rugged mountains of western North America. They are higher than the mountains of our own continent, — so high that even in the parts near the equator some of the peaks are covered with snow and ice the year round.

The Brazilian Highlands, in the east, and the Guiana Highlands, in the north, are old, worn-down mountains like some of the highlands of eastern North America, and are very much lower and less rugged than the Andes. Judging from what you have learned about the mountains in North America, what kinds of work do you expect to find the people doing in the Andes? in the Brazilian Highlands?

In South America, as in North America, the young, rugged mountains of the west are separated from the old, worn-down mountains of the east by lowlands and interior plains. Only in the southern part of South America, however, are the plains like those of North America. The great Amazon Lowlands in the north are covered with tropical forests because they are hot and moist the year round. Why are the interior plains of North America so different from the Amazon Lowlands?

Farther south, in temperate South America, the plains are more like those in the United States. Why? The Pampa is a level grassland, and is like our Great Plains in many ways. What kinds of work do you suppose the people do there?

Turn over to page 6.

Figure 4. Distribution of rainfall in South America.

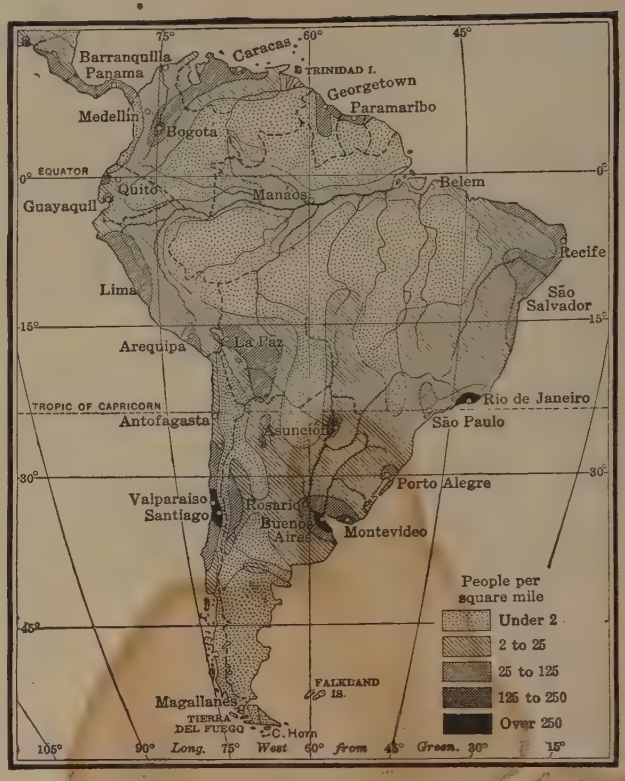


Figure 5. Distribution of people in South America.

MAP STUDIES

Foreword. Like North America, South America is made up of a number of great natural regions. The differences in surface and climate between these regions have much to do with the ways in which the people live in different parts of the continent. In working out the map studies below you will discover some interesting things about the regions of South America.

1. On the map opposite find the Andes Mountains. Notice that they extend all the way from north to south in the western part of South America. 2. What kind of mountains are they? 3. In what part of North America are there mountains of the same kind? *Study Figure 1.*

4. Find the Brazilian Highlands on the map. 5. In what part of South America are they? 6. What kind of mountains are they? 7. How do they compare in height with the Andes? 8. Find another region of old, worn-down mountains in South America. What are they called?

9. Find the Amazon Lowlands on the map. 10. What great river flows from west to east through these lowlands? 11. Into what ocean does it flow? 12. Notice how many tributaries the Amazon has. From what higher regions surrounding the Amazon Lowlands do they come? All the land drained by the Amazon and its tributaries is known as the Amazon Basin.

13. In what zone are the Amazon Lowlands? 14. What does that tell you about the climate there? 15. What else can you tell about the climate from Figure 4 above? 16. Since the Amazon Lowlands are hot and rainy, what do you expect to find growing there? Check your answer by the map opposite page 1 and by Figure 2.

17. Find the Paraná Lowlands on the map. 18. Do you expect the Paraná Lowlands to be warmer or cooler than the Amazon Lowlands? Why? 19. Find the Pampa, which extends southward from the Paraná Lowlands (*C6*). 20. In what zone is this plain? 21. About how much rain falls in the Pampa? 22. Do you expect the Pampa to be forested? Check your answer by the map opposite page 1 and by Figure 3.

SOUTH AMERICA
PHYSICAL MAP
SHOWING NATURAL REGIONS
Scale of statute miles
0 50 100 200 400 600 1000
Lowlands and interior plains
Old, worn-down mountains
Uplands and plateaus
Young, rugged mountains
Boundaries of natural regions
Average summit elevations in natural regions indicated thus: 500 to 1000 ft.
ATLANTIC OCEAN
PACIFIC OCEAN
CARIBBEAN SEA
Longitude West from Greenwich
Equator
Tropic of Capricorn
Andes Mountains
Amazon Lowlands
Guiana Highlands
Brazilian Highlands
Plateau of Central Brazil
Plateau of Bolivia
Plateau of Patagonia
Pampa
Gran Chaco
Falkland Islands
Tierra del Fuego
Juan Fernandez Islands
Chiloé I.
Chonos Archipelago
Trinidad I.
Marajó I.
Fernando de Noronha I.
Desventurados Is.
Sta. Catharina I.
Mouths of the Amazon
Delta of the Orinoco
Cape Horn
Strait of Magellan
Panama Canal
Gulf of Darien
Magdalena R.
Orinoco R.
Amazon R.
Paraguay R.
Paraná R.
Uruguay R.
Plata R.
Madeira R.
Tapajoz R.
Xingu R.
Tocantins R.
São Francisco R.
Parnahyba R.
Parnaguá R.
Araguaya R.
Rio Negro
Rio Branco
Purús R.
Yapurá R.
Putumayo
Japurá R.
Iça R.
Javary R.
Ucayali R.
Marañon R.
Beni R.
Mamoré R.
Grapore R.
Paraguay R.
Pilcomayo R.
Bermejo R.
Salado
Colorado R.
Negro R.
Chubut R.
Deseado R.
Gulf of San Matias
Gulf of St. George
Bahia Blanca
C. San Antonio
Cape Frio
Cape of Good Hope
Mouths of Niger R.
Mouths of Congo R.
Victoria Falls
Fiji Is.
Malacca Strait
Tasmania
Sydney
Niagara Falls
Caracas
La Guaira
Maracaibo
Barranquilla
Colon
Panama
Buenaventura
Quito
Guayaquil
Iquitos
Trujillo
Callao
Lima
Cuzco
Lake Titicaca
La Paz
Arequipa
Mollendo
Arica
Iquique
Antofagasta
Taltal
Coquimbo
Valparaiso
Santiago
Concepción
Valdivia
Puerto Montt
Magallanes
Georgetown
Paramaribo
Cayenne
Belem (Pará)
Manaos
Fortaleza (Ceará)
Recife (Pernambuco)
São Salvador (Bahia)
Caravellas
Ouro Preto
Victoria
Rio de Janeiro
São Paulo
Santos
Guayra Falls
Iguassu Falls
Itapura Falls
Asuncion
Tucumán
Salinas Grandes
Cordoba
Mendoza
Rosario
Porto Alegre
Rio Grande do Sul
Montevideo
Buenos Aires
Cuyaba
Goyaz
Chuquisaca
Sucre
Potosi
Oruro
Mt. Chimborazo 20,702
Mt. Misti 19,200
Mt. Illimani 21,186
Mt. Itatiaya 9823 ft.
Mt. Aconcagua 23,080
Lake Titicaca 12,000 to 13,000 ft.
Andes 14,000 to 21,000 ft.
Plateau of Bolivia 12,000 to 13,000 ft.
Plateau of Patagonia 1000 to 2000 ft.
Pampa 500 to 1000 ft.
Plateau of Central Brazil 1000 to 3000 ft.
Brazilian Highlands 2000 to 6000 ft.
Guiana Highlands 2000 to 8000 ft.
Amazon Lowlands 100 to 500 ft.
Orinoco Lowlands 100 to 500 ft.
La Plata Lowlands 100 to 500 ft.
Gran Chaco 100 to 500 ft.
Andes 10,000 to 14,000 ft.
Andes 5000 to 14,000 ft.
Andes 14,000 to 21,000

The people of South America. You will remember that many of the early settlers in Mexico and Central America married native Indians. The same thing happened in South America, and for that reason large numbers of the South Americans are *mestizos*, or people of mixed white and Indian blood. Many of the mestizos are poor and ignorant, but there are many others who are well educated and who hold important positions in government and business.

There are still many pure-blooded Indians left in South America, — many more than in North America. In the warmer parts of the continent there are also a good many negroes and people of mixed Indian and negro blood.

In some of the South American countries most of the people are white. Many of them are descendants of the early Spanish and Portuguese settlers, but there are large numbers who have come to South America more recently. Among them are people who have come from Spain, Portugal, Italy, Germany, and other European countries, or whose parents or grandparents came from there.

Although there are white people in all the South American countries, the greatest numbers are in the southern, or temperate, part of the continent. This is the part where most of the newer settlers from Europe have chosen to make their homes. Can you explain why?

A check. Turn back to page 2 and see if you can now answer the four questions there.

Proving your acquaintance with South America. Prove that you are getting acquainted with South America by giving the right words to fill the blank spaces in the sentences below:

1. The greater part of South America is in the _____ zone.
2. The southern part of South America is in the _____ _____ zone.
3. In temperate South America summer begins in the month of _____, and winter begins in the month of _____.
4. The Andes Mountains are young and rugged like the _____ Mountains of North America.
5. The great Amazon Lowlands are in the _____ zone of South America, and are covered with tropical _____.
6. The great plain known as the Pampa is in the _____ zone of South America.
7. The Pampa has too little rain for the growth of _____.

Special credit work. On an outline map of South America draw and color the natural regions of the continent.

II. TROPICAL SOUTH AMERICA

Foreword. Turn to the map on pages 24–25, and name the South American countries which are wholly, or almost wholly, north of the tropic of Capricorn. These are the tropical countries of South America. Through what three of them does the equator pass? What five of them share the great Amazon Lowlands? What five share the Andes Mountains?

You have already learned that tropical lowlands are warm the year round, while tropical highlands are much cooler. For this reason, and because of differences in surface and rainfall, the life and work of the people in various parts of tropical South America depend largely on the natural regions in which they live.

Think what you have learned about the work of the people in the different natural regions of Mexico and Central America, and then make a list of the kinds of work that you think you are likely to find going on in the highlands and lowlands of tropical South America. Keep your list until you have finished studying this chapter, and then see how nearly right you were.

1. Brazil—Giant of South America

Brazil is often called the "giant country" of South America because it is nearly as large as all the other South American countries added together. It is a giant country of the world too, for only Canada, the United States, and two others are larger. Even our own country is smaller than Brazil if we leave out Alaska.

In spite of its great size, Brazil has only about a third as many people as the United States. Vast stretches of the interior of the country are very thinly populated, and most of the people live in a belt a few hundred miles wide along the coast. As you study this section, find reasons why Brazil is so much less densely populated than the United States.

Alexander Hamilton Rice Expedition

Figure 6. An airplane view of Manáos, Brazil's inland seaport on the Amazon River. Manáos has about 75,000 people. The picture shows that it has broad streets, electric-car lines, and many fine buildings. The large building in the center is a theater.

In the heart of the Amazon Lowlands. Try to imagine that you have stepped into an airplane and have flown from your home to Manáos, in Brazil. You are now in the heart of the Amazon Lowlands, nearly a thousand miles from the Atlantic Ocean. Find Manáos on the map on pages 24–25 (*C4*). Notice that in spite of its distance from the ocean it is a seaport. What great river makes it possible for ocean ships to reach Manáos? Study Figure 6.

The tropical forest. Try to picture to yourself the great tropical lowland in which Manáos is located. It is a vast plain, warm the year round because it is low and near the equator, and having so much rain that it is covered with thick tropical forests. The trees are of many different kinds, and in places they grow so close together that their branches intertwine overhead, shutting out much of the sunlight. Vines with bright-colored flowers climb the tree trunks and form loops from one tree to another. Parrots and other gorgeously colored birds fly from tree to tree, and troops of monkeys chatter to one another as they swing from limb to limb.

In many places the undergrowth of bushes and plants is so thick that it is hard to cut a path through the forest. Think how hard it must be to build a road or a railroad through such a region. Turn to the map on pages 24–25, and notice how few railroads there are in this great tropical forest.

The Amazon River. The great highway of travel and transportation through this lowland region is the Amazon River. It rises in the Andes, where it is known as the Marañon River. On the map on pages 24–25, find Iquitos on the Marañon River in Peru (*B4*). Iquitos is 2300 miles from the mouths of the Amazon, yet ships from the ocean can reach its wharves. Trace the Amazon downstream from Iquitos to the Atlantic Ocean, and notice how many navigable tributaries join this great river from the north and south. This will show you that the Amazon and its tributaries form a network of navigable waterways by means of which people can travel by boat to nearly all parts of the lowlands.

Courtesy of Joseph T. Singewald, Jr.

Figure 7. Amazon Indians in a "dugout" canoe which they have made by hollowing out a large tree trunk. In canoes of this kind the Indians often travel long distances on the rivers.

The Amazon is one of the longest rivers in the world, and it carries more water to the ocean than any other river. With its tributaries, it washes so much mud and sand from its basin that it makes the ocean water muddy for a hundred miles or more beyond its mouths.

Rain and floods. The people of the Amazon Lowlands divide the year into two seasons, which they call the rainy season and the dry season. The rainy season comes at different times in different parts of the lowlands, but while it lasts there is rain nearly every day. When the people speak of the "dry season," they do not mean a season without any rain, but simply the six months when it rains much less than in the rainy season.

During the rainy season the rivers rise and overflow their banks, and the waters spread out over miles and miles of the low-lying land, forming vast shallow lakes. For this reason houses close to the rivers are often built on posts so that they will be above the water in the flood season. *See Figure 2.*

Reasons for the heavy rainfall. You will remember that the *northeast trade winds* of the Northern Hemisphere bring rain to the eastern slopes of the mountains in Mexico, Central America, and the West Indies. There are winds of the same kind in the Southern Hemisphere, but they blow from the southeast toward the equator. They are called the *southeast trade winds*, and they bring rain to the Amazon Lowlands.

Near the equator the northeast trade winds and the southeast trade winds meet in a calm belt called the *doldrums*. In this belt the moist air rises high above the earth's surface, and as it rises it cools and gives up much moisture. That is another reason why the Amazon Lowlands have so much rain.

A thinly settled region. Figure 5 shows that most of the people of the Amazon Lowlands live along the Amazon River and the two tributaries that join it near Manáos, and that even there the population is not dense. Few white people have moved into this region because the hot, moist climate is uncomfortable and, oftentimes, unhealthful. In the towns and villages along the rivers there are many mestizos, but the people who live in the deep forest are mostly native Indians. They wear few clothes, and their houses are little huts made of wood.

The Indians get their food by catching fish and turtles in the rivers, hunting wild animals, and gathering fruits and nuts which grow wild in the forest. Some of them have little gardens where they raise a few vegetables. *See Figure 7.*

Two Amazon cities. Now that you know more about the Amazon Lowlands, are you wondering why as large a city as Manáos has grown up in the heart of this tropical region? A visit to the wharves along the river front will show you the reason. There you will see ocean ships loading big balls of rubber for export. The rubber tree grows wild in the Amazon Lowlands, and rubber is the only

important export of the region. Manáos is the great inland center for the collection and shipment of rubber.

At the mouth of the Amazon is another city which owes its growth chiefly to rubber. This is Belem, the ocean gateway into the Amazon Lowlands and the leading seaport of northern Brazil. Find Belem on the map on pages 24–25 (*E4*). What other products are exported from there?

Rubber-gathering. The men who gather the rubber are Indians and mestizos who live in little huts in the forest. Sometimes a rubber-gatherer lives all by himself, but more often several live in the same place.

When the rubber-gatherer starts out for work in the morning, he carries a small hatchet and a supply of tin cups. Following a narrow path through the forest, he soon reaches the first rubber tree. With his hatchet he cuts several grooves in the bark and hangs a cup at the lower end of each one.

Almost as soon as the groove is cut, a white juice which looks somewhat like cream begins to ooze out of the tree and drips slowly into the cup. This juice is called *latex*. As soon as the rubber-gatherer has "tapped" one tree to start the latex flowing, he walks on through the forest to the next tree on his path. The path has the form of a loop, starting from his hut and leading back to it. By noon he has tapped all the trees and is back home. *See Figure 8.*

In the afternoon the rubber-gatherer starts out again, this time carrying a large bucket. Following the path from tree to tree, he pours the latex from the tin cups into his bucket. When he gets home again, his bucket is full. Near his hut he builds a fire of sticks and palm nuts. Over the blaze he places a metal cone with the small end up so that the smoke will pass through it. On each side of the fire is a post with a forked end. These forked posts support a strong pole, much as the goal posts on a football field support the crossbar, but the pole rests loosely between the forks so that it can be turned over and over.

Courtesy of U. S. Rubber Company

Figure 8. A rubber-gatherer tapping a rubber tree. The rubber trees are scattered widely through the forest, and the gatherer has to walk several miles each day to tap the trees and collect the latex.

Taking a cupful of latex, the rubber-gatherer pours it over the middle of the pole just above the smoke, turning the pole as he does so. The heat and smoke harden the latex, forming a coating around the middle of the pole. Cup after cup of latex is poured on the slowly turning pole until a ball of hardened rubber has been formed. When the ball is a foot or more through the middle, it is pulled off the pole and a new one is started.

The work of gathering the rubber and hardening it into balls goes on in the forest from November until May, for that is the time when the latex flows best. By the end of the season the rubber-gatherers have a large number of big balls ready to be sent to Manáos or Belem for export to distant lands. *See Figure 9.*

Courtesy of Joseph T. Singewald, Jr.

Figure 9. Balls of rubber piled on a river bank in the Amazon Lowlands. A steamer or a launch will stop here to get the rubber and carry it to Manáos or Belem for export to distant lands.

Rubber plantations. Most of the rubber from the Amazon Lowlands comes from the wild trees, but in a few places rubber plantations have been started. Here the trees are set out in rows on land cleared for the purpose, and natives are employed to care for them. Gathering the latex on the plantations is much easier than in the thick forests where the rubber trees are so far apart.

Other kinds of work. Some of the people of this region make a business of gathering Brazil nuts, which grow wild in the tropical forest. Large quantities of these nuts are exported to the United States, where many are sold in fruit stores and grocery stores, and many are used for making vegetable oil.

In the eastern part of the lowlands, near Belem, there are plantations of cacao, sugar cane, and other tropical crops, but this is the only section where farming is of any importance. There are vast stretches of land that might perhaps be cleared and used for tropical crops, but this will not be done until many more white people come to live in the region and more railroads are built.

There is less lumbering than you might expect in this region, because the trees that are good for lumber are widely scattered, and the forests are so thick that it is hard to get the logs out. Furthermore, the great markets for lumber are far away in Europe and North America, and it is very expensive to ship lumber so far.

At present rubber is the one great product of the Amazon Lowlands. Even so, this region produces only a small part of the world's supply of this important raw material. Most of the rubber for the factories in our country and Europe comes from southeastern Asia, where it is produced more cheaply on great plantations.

Making comparisons. In reading about the Amazon Basin have you thought how different it is from the Mississippi Basin in the United States? Sum up some of the differences by arranging the phrases below in two lists. Head one list "Sights in the Amazon Basin," and the other "Sights in the Mississippi Basin."

Tropical forests
Fields of corn, wheat, and cotton
Ocean ships loading rubber
Coal mines and oil fields
Many railroads
People traveling in dugout canoes
Monkeys and parrots in the trees
Many large cities
Many factories
Boatloads of Brazil nuts

The eastern coastal plain. On the map find the coastal plain which borders the Brazilian Highlands on the north and east. This plain is warm because it is in the tropics, but it is not so uncomfortably hot as many parts of the Amazon Lowlands because the trade winds blow over it from the ocean. Since these moist winds must rise to cross the Brazilian Highlands, the eastern slopes of the mountains and the bordering coastal plain have a considerable amount of rain.

The Portuguese made their first settlements along this coastal plain, and today it is one of the most thickly populated parts of Brazil. The map on pages 24–25 shows that the coastal plain, with the neighboring part of the highlands, is a land of cotton, sugar cane, and cacao, and that these tropical crops are the leading exports. The cotton fields and the sugar plantations look much the same as those which you have seen in other warm lands.

Cacao plantations. If you like chocolate and cocoa, you will enjoy visiting a cacao plantation. The cacao trees are planted in rows on the plantations, and if you make your visit at the harvest season you will see great pods six to nine inches long hanging from the trunks and limbs. Men with sharp knives cut the pods from the trees and pile them in heaps on the ground.

A day or two later men, women, and children are busy "shelling" the beans. This means cutting open the pods and taking out the seeds, or beans, which are covered with pulp. The beans are light-colored, and there are often as many as thirty or forty in one pod. The fresh beans are put into boxes and heated to soften the pulp, so that it will come off easily, and to improve the flavor of the cacao. At the end of a few days the beans are spread out to dry in the sun. While they are drying they are raked and stirred until all the bits of pulp are removed and the beans have a brownish, polished appearance. Then they are packed in sacks, ready to be shipped away. *See Figure 10.*

Two important ports. Nearly all the larger cities of the coastal plain are seaports of some importance, but the two great leaders are São Salvador and Recife. At both of these ports you can see ships from distant lands unloading manufactured goods and taking on great quantities of plantation products. Find Recife and São Salvador on the map on pages 24–25 (*F4–5*), and name their exports.

Underwood & Underwood

Figure 10. Work on a cacao plantation. Find two people who are shelling cacao beans, and two others who are stirring the beans that are drying in the sun.

The Brazilian Highlands. The Brazilian Highlands are made up of many mountain ranges which run from northeast to southwest. The highest range is on the east, and it rises so steeply from the coastal plain that it has been hard to build railroads inland from the coast. For this reason it was a long time before many settlements were made in the highlands, and even now the greater part of the region is not thickly populated.

The eastern margin of the mountains gets much rain from the trade winds, but farther inland, especially in the north, the rainfall grows less, and much of the highland region is a *savanna,* or tropical grassland. Tropical grasslands do not make such good pasture lands as temperate grasslands because the grass withers and dries in the hot sun, and there are many insects which cause diseases among the cattle. Nevertheless, many parts of the Brazilian Highlands are used for raising cattle, and hides and meat are exported.

The parts of the highlands that have the most people are the agricultural sections near the coast. What plantation products of the northeastern part of the highlands are exported from São Salvador?

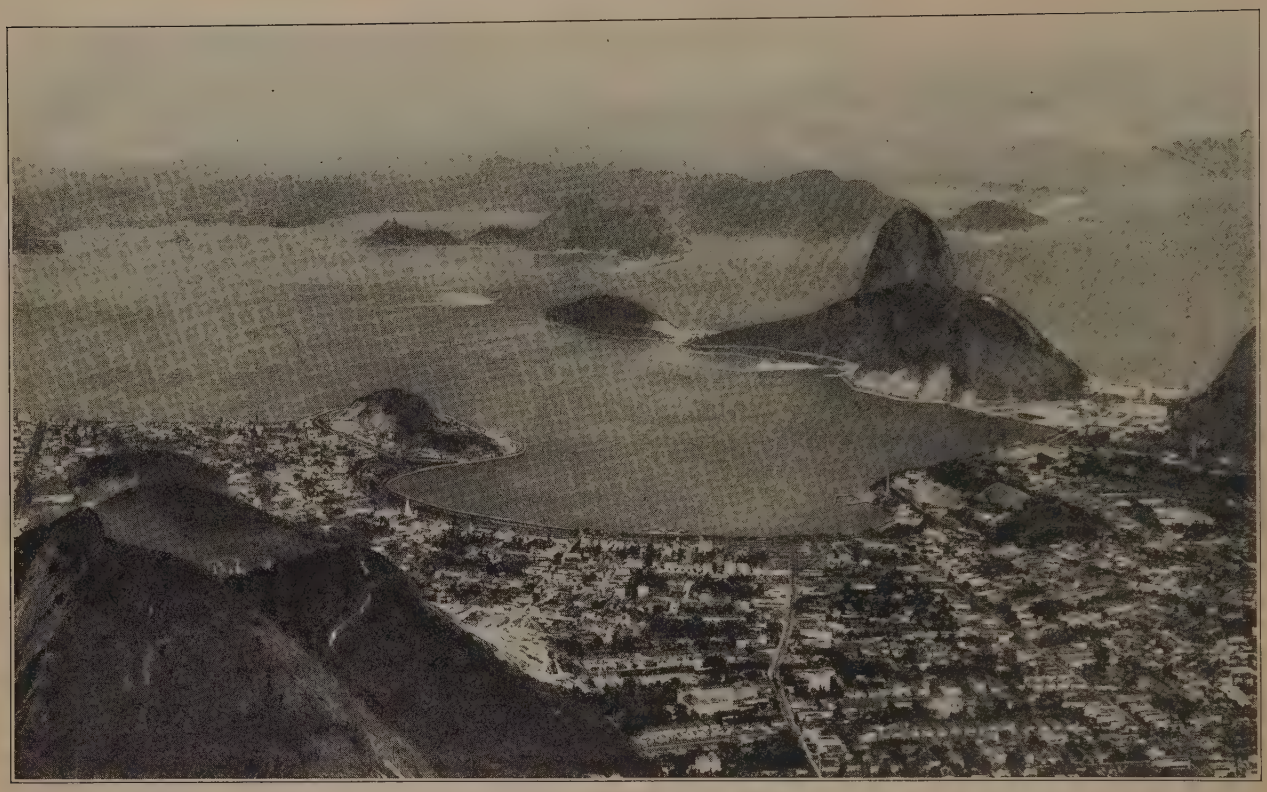


Figure 11. Rio de Janeiro as it looks from an airplane flying at a height of half a mile. Notice how the city spreads over the level land between the hills and mountains. The nearest mountain at the right overlooks the entrance to the harbor, and is called "Sugarloaf." What makes the harbor of Rio safe for ships?

Brazilian mines. On the map on pages 24–25 find the part of the Brazilian Highlands where mining is important. Gold and diamonds have been mined in this part of Brazil for more than three hundred years. At present, however, the most important mineral product is manganese, which is used in the making of steel. Large quantities of manganese ore are exported to the United States.

Brazil has millions of tons of high-grade iron ore, but at present very little is mined. One reason for this is that our country and the countries of Europe, which need the most iron ore, get their supplies from places near at hand. Another reason is that Brazil has no good coking coal for smelting iron ore.

Rio de Janeiro. On the map on pages 24–25 find Rio de Janeiro, the capital of Brazil (*E6*). Notice that it is located on a part of the coast where the Brazilian Highlands rise directly from the sea. The city has grown up on the south side of the Bay of Rio de Janeiro, which forms one of the best harbors in the world. The bay extends fifteen miles inland from the sea, and the surrounding mountains protect it from winds and storms.

Rio, as the city is commonly called, has more than a million people, and is the largest city in Brazil and the second largest in South America. It has broad, smoothly paved streets shaded by palms and other tropical trees, fine business buildings, and beautiful homes surrounded by lovely gardens. There are many public parks, and a broad boulevard runs along the shore of the bay for many miles. At night, when the electric lights are turned on, people call this boulevard "Rio's sparkling necklace." *See Figure 11.*

From Ewing Galloway, N. Y.

Figure 12. Picking coffee in Brazil. Boys and girls often help to pick the coffee berries from the trees.

From Ewing Galloway, N. Y.

Figure 13. Raking coffee beans into piles in a drying yard on a plantation near São Paulo. In the distance you can see a hillside entirely covered with rows of coffee trees.

Along the water front is a stone quay, or wharf, several miles long. The quay is a busy place, for ships are always coming and going, bringing passengers and freight from distant lands and carrying Brazilian products to far-away parts of the world. What are the principal exports of Rio?

Of all the seaports of Brazil, Rio is the most important, and it is also the leading business and manufacturing center of the country. As a whole, Brazil is not a great manufacturing country, but at Rio you can visit factories where clothing, hats, shoes, cotton goods, furniture, leather, paper, and many other things are manufactured.

One reason why Rio has become the leading city of Brazil is its wonderful harbor. Another is that it is an ocean gateway for the most densely populated and most prosperous part of Brazil. Do you know what has made this part of the country so prosperous?

"Coffee Land." Turn to the map again, and find the city of São Paulo and the seaport of Santos, southwest of Rio. Notice how many railroads run inland from these cities. This southeastern part of the Brazilian Highlands is often called "Coffee Land." Three fourths of all the world's coffee is raised here, and coffee has brought much wealth to the people. Any one of the railroads that run inland from São Paulo will take you through miles and miles of coffee plantations where millions of coffee trees cover the hillsides.

Harvest season on the Brazilian coffee plantations begins in May and lasts until October. During that season you will see the plantation workers gathering the ripe, red berries from the trees. The berries look somewhat like red cherries, and each one contains two seeds, or "beans," buried in soft pulp. *See Figure 12.*

After the berries have been picked, there are several ways of preparing the coffee for market. One way is to spread the berries out on drying floors to dry in the sun. This takes two or three weeks, and from time to time the berries are stirred with rakes so that they will dry evenly. *See Figure 13.*

After the drying, the berries are put through machines which remove the dried skin and pulp and clean and polish the beans. When the beans are finally ready to be sold, they are packed in large bags and sent to Santos or Rio for export.

Figure 14. A public park in São Paulo. Broad, smoothly paved streets, beautiful parks, and fine buildings show that coffee has brought much wealth to this Brazilian city.

Santos has grown up on the coast as a seaport for the export of coffee and other products of the neighboring highlands. It is a busy city, but it is smaller than São Paulo because it is on lower land and is a hotter and less comfortable place in which to live.

The great interior. North of the tropic of Capricorn and west of the Brazilian Highlands is the part of Brazil which is called "the great interior." It is made up of the Plateau of Central Brazil and the lower lands bordering the upper courses of the Paraná and Paraguay rivers. Find this part of Brazil on the map.

One reason why so much of the world's coffee is raised in this part of the Brazilian Highlands is that the climate and soil are just right for the best growth of the coffee plant. Another is that coffee-growing made an early start here just as cotton-growing did in our own Southern States, and as yet no other part of the world has caught up with Brazil in coffee production.

Other work in "Coffee Land." For many years the people of this region raised little else than coffee, but they have found that it is not wise to depend so largely on one crop. Today they raise corn, beans, rice, and potatoes for food, and cotton for the manufacture of clothing. Cattle are raised and sent to meat-packing plants in Rio and São Paulo, and meat and hides are important exports.

São Paulo and Santos. São Paulo has more than half a million people, and it is often called "the capital of Coffee Land" because it is the great railroad and business center of the coffee-growing district. Like Rio, it is a manufacturing city, with textile mills, shoe factories, hat factories, and many other manufacturing plants. *See Figure 14.*

This great interior region of Brazil is as thinly settled as the Amazon Lowlands, but for a different reason. Much of it is *savanna*, or tropical grassland, but there are many forested stretches, especially along the rivers. Its surface and climate are well suited to farming, yet there are vast stretches of unused land. The crops that are raised are chiefly for the use of the people who live there. The principal use of the land is for cattle-raising, and the only export of importance is cattle hides.

The reason why so few people live in this region is because it is harder to reach than any other part of Brazil. It is shut off from the coast by the Brazilian Highlands, and its only railroad is the one from São Paulo to the Paraguay River. Some day, when more railroads connect the interior with the coast, more people will go to live there, and it will be a much greater farming and grazing region.

Temperate Brazil. Turn to the map on pages 24–25 and study the part of Brazil which lies in the south temperate zone. This temperate part of Brazil is very small compared with tropical Brazil, yet it is about four fifths the size of our great state of Texas.

It includes the southern end of the Brazilian Highlands and a part of the great region of plains known as the Paraná Lowlands. The plains are chiefly grasslands, much like the prairies of our country.

This is the part of Brazil which thousands of settlers from Europe have chosen for their home in recent years, and it has fewer Indians and mestizos than any other part of the country. Explain why white settlers prefer this part of Brazil to the tropical part.

Farming and stock-raising. Temperate Brazil is about the same distance from the equator as our Southern States, and has a long growing season. In the eastern part of the highlands region at the north the people raise coffee, cotton, and rice as well as temperate crops such as corn and wheat. Many of them carry on mixed farming, keeping cattle and hogs in addition to raising crops. In the plains farther south there are great cattle ranches which will remind you of the plains of Texas. At Rio Grande do Sul, the chief port of this region, there is a large meat-packing plant, and meat and cattle hides are exported.

Two forest products. The map opposite page 1 shows that the southern end of the Brazilian Highlands is covered with temperate forests. This is Brazil's lumbering region. Forests of splendid pine trees cover large stretches of land, and much pine lumber is exported to Uruguay and Argentina, countries which have little lumber of their own.

One of the trees that grows abundantly in the southwestern part of the Brazilian Highlands and along the Paraná River in Brazil and Paraguay is a kind of holly. The leaves of this tree are used to make what is called *yerba maté*, or Paraguayan tea. The people of southern Brazil and the neighboring countries like this kind of tea so well that thousands of men make a business of gathering the leaves and preparing them for use. In many places there are yerba-maté plantations,

Courtesy of the Pan American Union

Figure 15. Workmen carrying maté branches which they have cut from the trees. They will strip the leaves from the branches and cure them over a wood fire.

and maté leaves are exported to Argentina and Uruguay. *See Figure 15.*

Looking ahead. Some people believe that in time temperate Brazil will be the most densely populated part of the country. Already manufacturing is well started in the larger cities, and towns that were once small market centers are growing fast. The climate is well suited to white people, and every year brings many new settlers from Europe.

Giving reasons. You should be able now to explain why Brazil is so much less densely populated than the United States. Prove that you understand the reasons by completing the sentences below.

1. The Amazon Basin has few people compared with the Mississippi Basin because ____ ----------.

2. The people of Brazil have not spread far inland from the Atlantic coast as the people of the United States have done because ____ ----------.

3. The great interior of Brazil is thinly populated because ----------.

4. Brazil has much less land suited to white people than the United States has because ____ ----------.

Courtesy of Williams, Brown, and Earle

Figure 16. Loading sugar for export at Georgetown, the capital of British Guiana. Study the map and tell what this ship may have brought to Georgetown

Planning for work in Brazil. Imagine that eight of your friends have decided to move to Brazil, and that each one wishes to do a different kind of work there. Tell where each friend must go in Brazil to find the kind of work he wants, and what he may expect to see when he gets there. Name the Brazilian seaport for which he must buy a ticket, and use the maps to make all your directions clear.

Following are the kinds of work that your friends wish to do:

1. Start a rubber plantation.
2. Raise cane sugar.
3. Open a manganese mine.
4. Manage a cotton mill.
5. Carry on mixed farming.
6. Raise coffee.
7. Raise cacao.
8. Manage a yerba-maté plantation.

2. Three European Possessions

Bordering Brazil on the north is the only part of South America that is not an independent country. This part is known as Guiana, and it is divided into three European colonies: British Guiana, belonging to Great Britain; Dutch Guiana, belonging to the Netherlands; and French Guiana, belonging to France. Find the three Guianas on the map. As you read about these possessions, find reasons why they are valuable to the countries which own them.

The land and the people. The map shows that the Guianas are divided into two regions, — the coastal lowland and the mountains of the interior. The coastal lowland is hot, rainy, and unhealthful for white people, and much of it is covered with tropical forest. Farther inland there are tropical grasslands, and the higher parts of the mountains are forested.

These colonies are thinly populated. There are no railroads leading into the interior, and so most of the people live along the coast. Scattered through the tropical forests of the interior are tribes of Indians who live much as those of the Amazon Lowlands do. The rest of the people are largely negroes and East Indians; that is, people from the East Indies in Asia. The East Indians, like the negroes, can stand the hot, moist climate of the lowlands because their home in Asia has a climate much the same.

Farming and mining. Agriculture is by far the most important work in the Guianas. Along the coast there are plantations of sugar cane, rice, coconuts, cacao, and other tropical crops. Some of the plantations are owned by white men and some by East Indians. Of all the plantation products sugar is the most important, and raw sugar makes up more than half the exports from the colonies. *See Figure 16.*

In all three colonies a little gold is mined and exported, but the leading mineral product is diamonds. These precious stones are mined in British Guiana. Bauxite mines owned by companies in the United States and Canada have been opened in British Guiana and Dutch Guiana, and the export of bauxite is growing in importance. You will remember that bauxite is the ore from which aluminum is obtained.

A sentence to complete. The chief products which make the Guianas valuable possessions are s____, d_____, b_____, and g___.

3. The Caribbean Countries (Venezuela and Colombia)

Turn to the map on pages 24–25, and find Venezuela and Colombia. Which of these two countries has its entire coast on the Caribbean Sea? Which one borders the Pacific Ocean as well as the Caribbean Sea? Which one is connected with North America by the Isthmus of Panama?

Although Colombia is not so very much larger than Venezuela, it has more than twice as many people and carries on much more trade with other countries. As you study this section, find reasons for these differences between Venezuela and Colombia.

By Thomas F. Lee from Ewing Galloway, N.Y.

Figure 17. The pier at Puerto Colombia. The pier is a mile long, providing space for many ships to load and unload at the same time. Study the map and tell what the freight cars carry from Puerto Colombia to Barranquilla. What do they bring back for export?

Two navigable rivers. On the map on pages 24–25 find the Orinoco River in Venezuela (*C3*) and the Magdalena River in Colombia (*B3*). Notice that both rivers are navigable. Good-sized ocean vessels can enter the mouth of the Orinoco and go upstream as far as Ciudad Bolivar, 230 miles from the ocean. From Ciudad Bolivar river boats can go far inland on the Orinoco and its tributaries.

You might well expect the Orinoco to be a great highway of travel and transportation like the Amazon, and Ciudad Bolivar to be a busy seaport. This, however, is not true. Ciudad Bolivar is not an important seaport, and the only ocean-going ships which come to its wharves are freighters from ports on the northern coast of Venezuela.

The Magdalena River is different. Ships cannot enter its mouth because the lower course of the river is shallow and blocked by sand bars. In spite of this, the Magdalena is used much more for travel and transportation than the Orinoco. Ten miles upstream from its mouth is the river port of Barranquilla, one of the large cities of Colombia. A few miles to the west is Puerto Colombia, which serves as the seaport for Barranquilla. Find these two cities on the map on pages 24–25 (*B2*).

If you visit Barranquilla, you will see many boats which run between that city and river ports farther upstream. If you visit Puerto Colombia, you will see ocean ships from distant lands. Connecting the two cities is a railroad which carries passengers and freight back and forth between the river port and the seaport. *See Figure 17.*

Why is the Magdalena River such a great highway of transportation, while the Orinoco, which is longer and navigable for ocean ships far upstream, is used much less? You will be able to answer this question after you have studied more about the Caribbean countries.

Lowlands that have few people. On the map on page 5 find the Orinoco Lowlands which border the Orinoco River and its tributaries. Notice that these lowlands extend through central Venezuela into eastern Colombia, where they meet the Amazon Low-

lands. You already know that the Amazon Lowlands are covered with thick forests and have few people. In Colombia, as in Brazil, most of the people of the Amazon Lowlands are Indians and mestizos, and rubber-gathering is the only important work.

The Orinoco Lowlands are as thinly populated as the Amazon Lowlands, but for a different reason. They are tropical grasslands, and are known as the *llanos*. They are warm the year round because they are near the equator, and they have a rainy season and a dry season. From May till October there is so much rain that the lower parts of the llanos are often under water, and from December till March so little rain falls that the grass withers and dies in the hot sun.

Such a region is not a pleasant place in which to live. Farming is difficult, because during part of the year there is too much rain and during the rest there is too little. Cattle-raising is the only work of importance, and even this is hard, because in the rainy season much of the grazing land is flooded and in the dry season the withered grass makes poor feed for the cattle.

Few people, then, live in the eastern lowlands of Colombia and the central lowlands of Venezuela. You can see now why the Orinoco River is not used so much as it might be for transportation, and why Ciudad Bolivar is not a great seaport. What is the reason?

Another thinly populated region. About a third of Venezuela is in the Orinoco Lowlands. Another third or more is in the Guiana Highlands which border the lowlands on the southeast. Here too there are but few people because of the rough surface, the tropical heat, and the thick forests. There is only one short railroad in this region, and the mountain streams are not navigable. The highlands are thought to be rich in metal ores, but there is only one mining district. What kind of ore is mined there?

Highlands that have many people. The map on page 5 shows that the Andes Mountains run from north to south through western Venezuela and Colombia. In Colombia they are made up of three great ranges running side by side. The eastern range divides at the north, running to the Caribbean coast, and almost encircling Lake Maracaibo. Which of the two Caribbean countries has by far the larger share of the Andes?

Now turn to Figure 5 on page 4, and you will see that the Andes are the most densely populated region of the Caribbean countries. Remember what you have learned about highlands and lowlands in the tropics, and you will understand why more people live in the Andes than in any other region of these tropical countries.

Except for the seaports and the river port of Barranquilla, all the larger cities of Colombia and Venezuela are in the Andean region, where the elevation of the mountains makes the climate cooler and more healthful than in the lowlands. Among these cities are Bogotá and Caracas, the capitals and largest cities of the two countries. Find them on the map on pages 24–25 (*B3* and *C2*).

Bogotá is on a plateau in the midst of the mountains. It is a mile and a half above the level of the sea, and so in spite of its nearness to the equator it is a comfortable and healthful place in which to live. Caracas is but half a mile above sea level, yet it is much cooler than La Guaira, its seaport, which is only twenty-three miles away. *See Figure 18.*

Coffee and other crops. In spite of the rough surface farming is the most important kind of work in the Andean region. Here, in Colombia and Venezuela, is the second great coffee-growing region of South America. Coffee is by far the most important export from Colombia and the second most important from Venezuela. Find the coffee lands of the Caribbean countries on the map.

There are two reasons why coffee is the leading crop in the Andean region. One is that the climate and soils are well suited to the coffee plant. The other is that the steep mountain slopes can be used for coffee plantations because coffee is a tree crop and does not require the use of machinery.

In the lower valleys among the Andes the people raise tropical crops such as cacao, sugar cane, and cotton. These crops are also grown on the lowlands between the northern end of the Andes and the coast. Which one of them is an important export of Venezuela?

Courtesy of the Pan American Union

Figure 18. Caracas, the capital of Venezuela. Caracas is connected with La Guaira by a railroad and an automobile road. Six times as many people live in Caracas as in La Guaira. Explain why.

In northern Colombia there is a section where a great North American fruit company has large banana plantations such as you saw in Central America. Since these plantations were started, the coastal town of Santa Marta has become a busy seaport. Study the map, and explain why.

On the plateau surrounding Bogotá and on other high plains among the mountains the people raise wheat, barley, potatoes, and other temperate crops. That is because the climate of these higher parts of the Andes is much cooler than the climate of the lowlands.

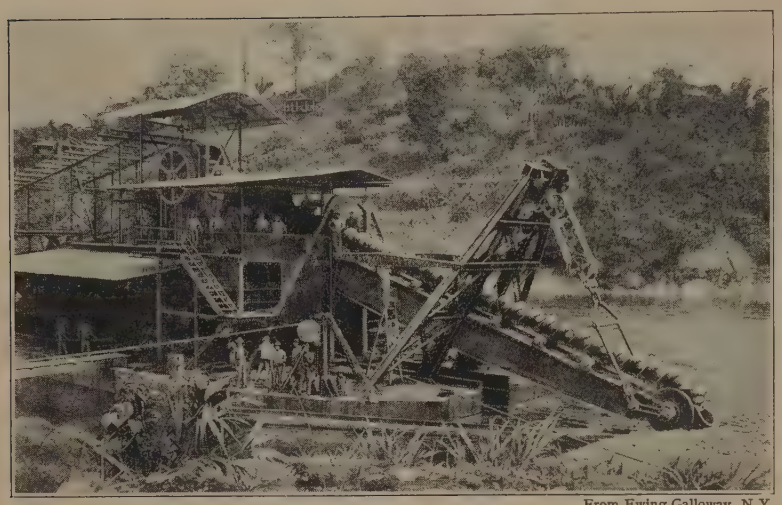
Cattle-raising. The map shows that hides are an important export from both Colombia and Venezuela. Most of the cattle are raised in the Andean region and on the coastal lowlands at the north, where there are the most cities and towns to provide markets for meat. Cattle-raising, as you know, is also carried on in the llanos, but the cattle from that region are fattened in pastures near the seaports and city markets in northern Venezuela.

Precious metals and stones. You will remember that the young, rugged mountains of North America are rich in metal ores. Since the Andes are a southern extension of those mountains, you will not be surprised to learn that they too have much mineral wealth. In Colombia there are several places where placer mining for gold and platinum is carried on. Platinum is a white metal like silver, but it is much more valuable than gold. Colombia is one of the two greatest platinum-mining countries in the world. *See Figure 19.*

Perhaps you have seen a pin or a ring set with emeralds. These precious stones are green, and they cost more than diamonds. Nearly all the emeralds mined in the world come from Colombia.

Oil and asphalt. In addition to precious metals and stones, there is a wealth of petroleum in the Caribbean countries. The most important oil fields are around Lake Maracaibo in Venezuela and in the Magdalena valley in Colombia. Find them on the map, and study Figure 20.

Some of the oil produced in the Magdalena valley is refined there, and gasoline, kerosene, and other refined oils go down the Magdalena in river boats to be exported from Puerto Colombia. Crude oil is pumped through a



From Ewing Galloway, N.Y.

Figure 19. Placer mining in Colombia. The big dredge scoops up the stream gravels, which contain bits of platinum and gold. In what state of our country is gold mined in this way?

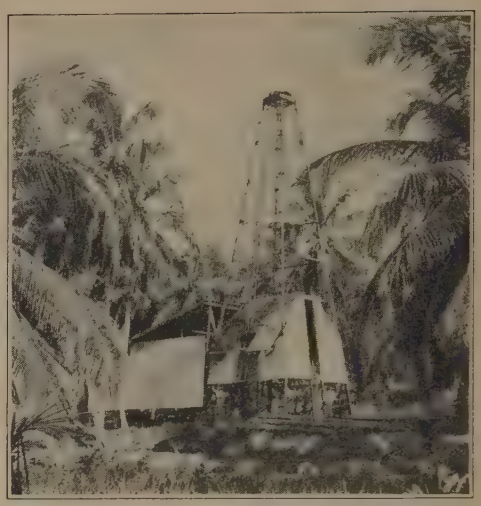


Figure 20. An oil derrick in the Magdalena valley. What ports of the Caribbean countries export mineral oils?

pipe line to the seaport of Cartagena for export. Find Cartagena on the map (*B2*).

The map shows that Lake Maracaibo is not really a lake, but the inner portion of the Gulf of Venezuela. At its northwestern end is the seaport of Maracaibo. Pipe lines from the oil fields of Venezuela bring crude oil to Maracaibo for export. Much of the oil goes to the little Dutch island of Curaçao, where there are refineries.

Each year Colombia and Venezuela are producing more and more oil, and in Venezuela the exports of mineral oils are worth much more than the exports of coffee.

If you live in the city, you know that asphalt is a soft, brownish-black substance which hardens in the air and is used in paving streets. Most of the asphalt that we use comes from petroleum refineries, for in refining certain kinds of petroleum asphalt is left after all the oils have been removed. In Venezuela there are asphalt "lakes" which have been formed by nature. The surface of the lakes is crusted over and is so hard that men dig the asphalt with pickaxes. Most of the asphalt mined in Venezuela is exported to the United States.

Transportation by river and railroad. The ranges of the Andes are so high and so steep that in spite of all the people who live in the Andean region few railroads have been built. The great highway of travel and transportation in Colombia is the Magdalena River, which flows northward between the central and eastern ranges of the Andes and is navigable for over 600 miles through the most densely populated part of the country. Do you see now why the Magdalena is used so much more for transporting people and goods than is the Orinoco?

Bogotá and a few other cities in the highlands are connected with the Magdalena River by railroads. From other places there are roads leading to the river, but many of them are so rough that only oxcarts can use them. Parts of the mountains have no roads at all, and the only way to travel or transport goods is on the backs of mules or donkeys.

Over the railroads, the cart roads, and even the mule paths, coffee and other products of the Andean region move toward the river for export to distant lands. At the river ports they are loaded on boats which carry them downstream. Their river journey ends either

at Barranquilla or at a port a little farther upstream. There they are loaded on trains which carry them to Puerto Colombia or to Cartagena. Manufactured goods and other imports from distant lands make the same journey in the opposite direction to reach the towns and cities in the highlands. *See Figure 21.*

Some of the products of the western part of the Andean region go down the Cauca River, which is a tributary of the Magdalena. Others go by train to Buenaventura, Colombia's seaport on the Pacific Ocean.

Courtesy of the Pan American Union

Figure 21. Boats being loaded with coffee at a small port on the Magdalena River. Find some of the donkeys which have brought the bags of coffee from the plantations to the river for export.

Venezuela has even fewer railroads than Colombia. The most important ones are short lines which connect the ports on the northern coast with the larger cities in the highlands. These railroads carry coffee, cacao, and other products of northern Venezuela to the seaports for export to distant lands.

A comparison. You have now learned enough about the Caribbean countries to understand why Colombia has more people and carries on more trade than Venezuela. The best climate for white people, the best farm lands, and the richest mining districts of both countries are in or near the Andean region. Since Colombia has much the greater share of this region, it has many more white people, raises more crops, and carries on more mining than Venezuela. Therefore it has larger quantities of products to export and can import greater quantities of goods in return.

You have found that Colombia has a coast line on the Pacific Ocean as well as on the Caribbean Sea. This gives Colombia an advantage over Venezuela in carrying on trade with the western part of the United States and the Pacific-coast countries of South America.

Giving reasons. Complete each of the following sentences by giving reasons for the fact which it states:

1. Most of the people of the Caribbean countries live in or near the Andean region because _____.
2. The Magdalena River is used much more than the Orinoco for travel and transportation because _____.
3. There are few railroads in the densely populated Andean region because _____.
4. Most of the railroads of Colombia connect cities and towns in the highlands with ports on the Magdalena River because _____.
5. Coffee is the leading crop in Colombia and Venezuela because _____.
6. Wheat and other crops of the temperate zone can be raised in these tropical countries because _____.
7. Mining is important in both Caribbean countries because _____.
8. Caracas is a much larger city than La Guaira, its seaport, because _____.
9. Barranquilla is a river port but not a seaport because _____.
10. Colombia has more people and carries on more trade than Venezuela because _____.

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Figure 22. Part of the great public square in Lima. The foundations of the beautiful church that you see in the picture are said to have been laid by Pizarro in 1535. How long ago was that?

Andes. For this reason we call them the central Andean countries. Which of these countries has no seacoast? Which one is the smallest? The name *Ecuador* means "equator." Why has the country been given that name?

Turn to the map again, and study the products and exports of these three countries. Then try to answer the following questions:

1. In which one of the central Andean countries is agriculture the most important kind of work?
2. In which one is mining the most important kind of work?
3. In which one are agriculture and mining both important?

Write your answers to these questions and keep them until you finish studying this section.

Trinidad

A British possession. On the map on pages 24–25, find the island of Trinidad (*C2*). Although Trinidad is close to Venezuela, it belongs to Great Britain. It has rich soils and a tropical climate, and plantation crops such as cacao, sugar, and coconuts are grown for export.

Trinidad has an asphalt lake like those in Venezuela, and the mining of asphalt is important. But Trinidad's most valuable mineral product is petroleum. Among all the lands that belong to the great British Empire, Trinidad stands second in the production of petroleum, and large quantities of mineral oils are exported to Great Britain.

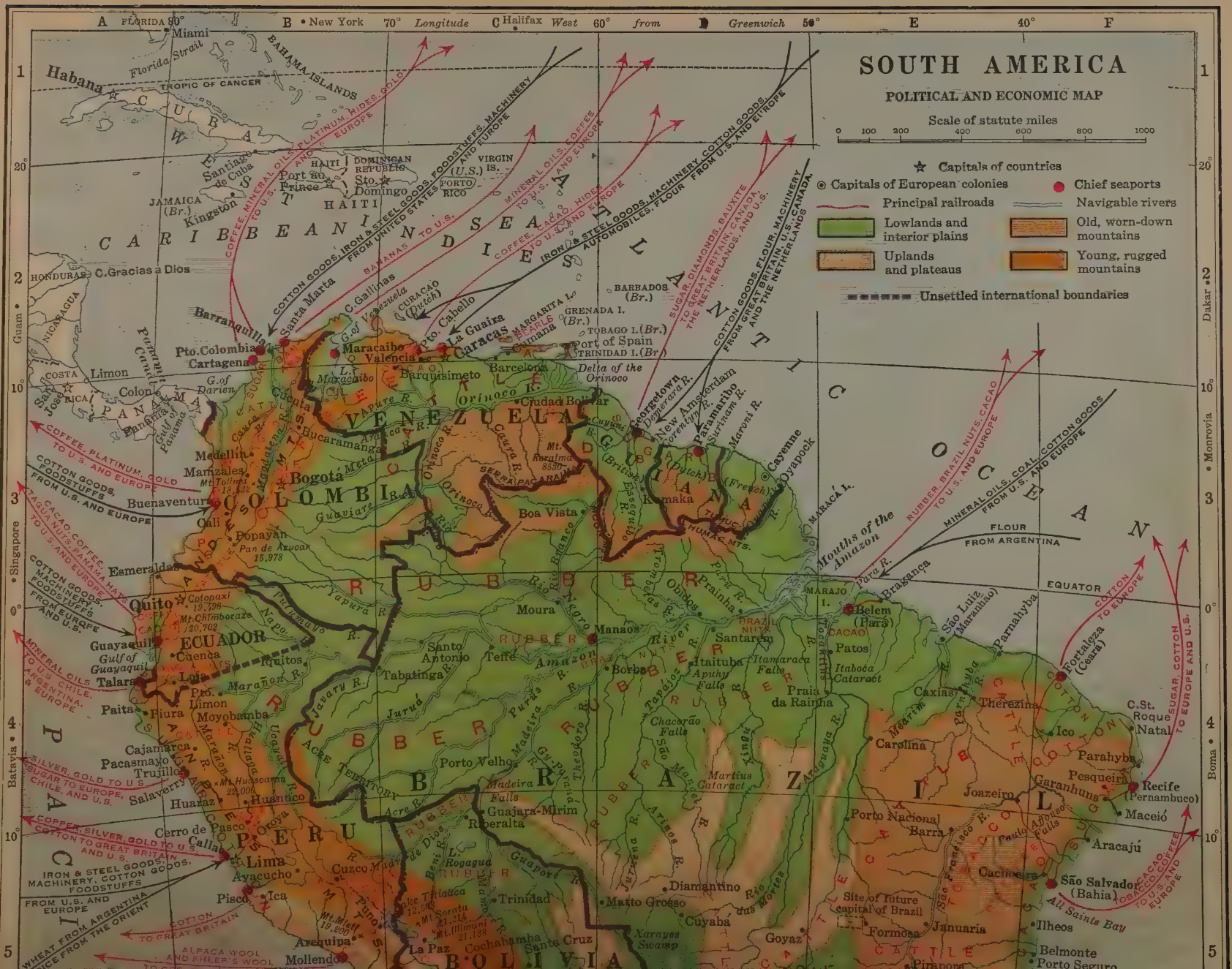
4. The Central Andean Countries (Ecuador, Peru, and Bolivia)

On the map on pages 24–25, find the countries of Ecuador, Peru, and Bolivia. You will see that they extend from just north of the equator to the tropic of Capricorn, and that they include the broad central part of the

An Indian empire of long ago. Long before Columbus discovered America there were Indians living in the central Andes who had become so powerful that they ruled over all the other Indian tribes from Colombia to northern Chile. The center of their empire was in the highlands of southern Peru. There they built wonderful palaces and temples of stone and decorated them with gold and silver which they mined in the mountains.

These rich, powerful Indians were known as the Incas. When the Spanish heard of their wealth of gold and silver, they sent Captain Pizarro with an army into western South America. Pizarro and his men conquered the Incas and made their empire a colony of Spain. That was nearly a hundred years before the Pilgrims came to America.

Eight miles from the Pacific coast Pizarro built a capital city for the new colony. Later this city came to be called Lima, and today it is the capital of Peru and the largest city of the central Andean countries. *See Figure 22.*


SOUTH AMERICA
POLITICAL AND ECONOMIC MAP
Scale of statute miles
0 100 200 400 600 800 1000
Capitals of countries
Capitals of European colonies
Chief seaports
Principal railroads
Navigable rivers
Lowlands and interior plains
Old, worn-down mountains
Uplands and plateaus
Young, rugged mountains
Unsettled international boundaries
A FLORIDA 90° B New York 70° Longitude C Halifax West 60° from D Greenwich 50° E 40° F
Miami
Florida Strait
BAHAMA ISLANDS
Habana
TROPIC OF CANCER
CUBA
WEST INDIES
CARIBBEAN SEA
Santiago de Cuba
Port au Prince
HAITI
DOMINICAN REPUBLIC
Sto. Domingo
VIRGIN IS. (U.S.)
PORTO RICO
JAMAICA (Br.)
Kingston
HONDURAS
C. Gracias a Dios
NICARAGUA
COSTA RICA
PANAMA
Limon
Colon
G. of Darien
Panama
Gulf of Panama
Panama Canal
C. Gallinas
Santa Marta
Barranquilla
Pto. Colombia
Cartagena
Maracaibo
Valencia
Pto. Cabello
CURAÇAO (Dutch)
La Guaira
Caracas
MARGARITA I.
PEARLS
GRENADA I. (Br.)
BARBADOS (Br.)
TOBAGO I. (Br.)
TRINIDAD I. (Br.)
Port of Spain
Barquisimeto
Barcelona
Delta of the Orinoco
Ciudad Bolivar
VENEZUELA
Cucuta
Bucaramanga
Medellin
Manizales
Mt. Tolima 18,102
Bogotá
COLOMBIA
Buenaventura
Cali
Popayan
Pan de Azucar 15,973
Esmeraldas
Quito
Cotopaxi 19,706
Mt. Chimborazo 20,702
ECUADOR
Guayaquil
Gulf of Guayaquil
Cuenca
Loja
Talara
Paita
Piura
Pto. Limon
Moyobamba
Cajamarca
Pacasmayo
Trujillo
Salaverry
Huaraz
Huanuco
Cerro de Pasco
Callao
PERU
Lima
Ayacucho
Pisco
Ica
Cuzco
Mt. Huascaran 22,000
Mt. Misti 19,200
Arequipa
Mollendo
La Paz
Lake Titicaca 12,506
Mt. Sorata 21,214
Mt. Illimani 21,138
Cochabamba
Santa Cruz
BOLIVIA
Georgetown
Demerara R.
New Amsterdam
Corentyne R.
Paramaribo
Surinam R.
Maroni R.
GUIANA (Dutch)
GUIANA (British)
GUIANA (French)
Cayenne
Oyapock
Kaieteur Falls
Mt. Roraima 8530
Boa Vista
Rio Branco
Rio Negro
Orinoco R.
Caura R.
Caroni R.
Cuyuni R.
Meta R.
Arauca R.
Apure R.
Guaviare R.
Putumayo R.
Napo R.
Yapura R.
Iça R.
Japura R.
Rio Purus
Rio Juruá
Rio Javary
Rio Jurua
Rio Madeira
Rio Tapajoz
Rio Xingu
Rio Tocantins
Rio Araguaya
Rio Grande
Rio Paraguay
Rio Pilcomayo
Rio Bermejo
Rio Salado
Rio Colorado
Rio Negro
Rio Chubut
Rio Santa Cruz
Rio Gallegos
Rio Deseado
Rio Chico
Rio Coig
Rio Iguassu
Rio Uruguay
Rio Parana

Map Plate, Patented July 5, 1921 • Method of Making Maps, Patented July 5, 1921

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Photograph by Ewing Galloway, N.Y.

Figure 25. Llamas resting in the railroad yards of a town in the Andes of Peru. They have brought bags of copper and silver ore down to the railroad from a mine much higher in the mountains.

to reach that no one would live there if it were not for the metal ores. Most of the larger mines belong to companies in the United States and Europe, though a few belong to wealthy Bolivians. Large numbers of Indians get their living by working for the mining companies. The men do the mining and the work in the smelters, but many Indian women and boys earn money by sorting the ores. *See Figure 26.*

Of all the metals mined in this region tin is by far the most important, and about one fourth of all the world's tin comes from Bolivia. Silver, copper, lead, and other metals are also mined, and altogether metals and metal ores make up about nine tenths of Bolivia's exports.

As you would expect, all the larger cities of Bolivia are mining centers. Among them are Oruro and Potosí, which were famous silver-mining towns in the days when Bolivia belonged to Spain. Today their tin mines are much more important than their silver mines.

The largest city of Bolivia is La Paz. It is one of the oldest cities in the Americas, for it was an Inca mining center long before the coming of the Spaniards. Find La Paz on the map (*C5*), and notice the railroads that meet there.

La Paz is the great business center of Bolivia. Many mining companies have offices there, and many other kinds of business are carried on. It is also the home of the president of Bolivia and the place where the Bolivian Congress meets to make laws for the country. For this reason you might well expect La Paz to be the capital of Bolivia. Study the map and see if this is true.

The map shows that Sucre, not La Paz, is the capital of Bolivia. It also shows that no railroad runs to Sucre. Since it is much easier to reach La Paz than Sucre, much more of the government business is carried on in La Paz than in the capital city. *See Figure 27.*

How Bolivia trades with the outside world. Since Bolivia has no seacoast, all its trade with distant lands must be carried on through ports of the neighboring countries. The nearest

Figure 26. Indian boys and women sorting ore at a tin mine in Bolivia. The ore from the mine passes by them on a broad, moving belt, and they pick out the worthless pieces of rock and throw them away.

Figure 27. A street in La Paz. Nearly all the buildings in La Paz are built of stone. Can you explain why? How many railroads meet in this city?

ports are on the coast of Peru and Chile. From La Paz there are three ways to reach the Pacific coast. One route starts with the railroad from La Paz to a town at the southern end of Lake Titicaca. This lake is the highest body of water in the world that is used for navigation. Boats meet the trains at the southern end of the lake and carry passengers and goods to a town in Peru at the northern end. From there a railroad runs to the seaport of Mollendo, in Peru.

The other two routes are by railroad from La Paz to the seaports of Arica and Antofagasta in Chile. Trace the three routes on the map, and name the products of Bolivia which are exported from Arica and Antofagasta.

Few crops can be raised in the plateau, and few factories have been built in the cities. For this reason the people need large quantities of foodstuffs and manufactured goods from outside. In exchange they have their metals and metal ores to export. They depend on the railroads to carry their exports to the seaports and to bring back foodstuffs, manufactured goods, and other supplies.

On the map on pages 24–25 trace the railroad that runs southward from the Bolivian Plateau to Buenos Aires, in Argentina. This railroad connects Bolivia with the Atlantic coast, but it is much longer than the routes to the Pacific. For this reason most of Bolivia's trade is carried on through the ports of Chile and Peru.

The eastern lowlands. East of the Andes in Ecuador, Peru, and Bolivia is the region which the people call the *montaña*. This is part of the hot, rainy Amazon Lowlands. Most of the people are Indians who live in little grass-roofed huts, wear few clothes, and get their living by hunting and fishing. Explain why they live so differently from the Indians in the Andes.

The only work of importance in the montaña is the gathering of wild rubber in the forests, and the only towns of any size are those where the rubber is collected for export. Chief among these is Iquitos on the Amazon River in Peru. This town is a busy river port, and at its wharves you will see ocean steamers which have come all the way up the Amazon to bring supplies for the people and to carry away rubber.

The coastal region of Ecuador. On the map on pages 24–25 find the Gulf of Guayaquil in Ecuador (*A4*). The valley lowland which extends northward from this gulf is the most densely populated part of the country. In the lowland the people raise tropical crops such as cacao, sugar cane, and cotton, and on the bordering mountain slopes they raise coffee. Which two of these crops are important exports of Ecuador? Name two other exports from this country.

Have you ever heard of tagua nuts? They are the seeds of the tagua palm, which grows wild in the tropical forests along the Pacific coast from Panama to northern Peru, and their kernels are so hard that they provide one of the best materials for making buttons.

Courtesy of the Pan American Union

Figure 28. A tagua palm in Ecuador. Hanging from the trunk are the big burrs which contain the nuts. The nuts are about as large as horse chestnuts. They are often called ivory nuts because the kernels are hard and white like ivory.

Large quantities of them are used for this purpose in the United States and Europe. In Ecuador many of the Indians make a business of gathering ripe tagua nuts and preparing them for export. *See Figure 28.*

Perhaps your father has a Panama hat, and, if so, it may have come from Ecuador. These soft, beautifully woven hats were first made in Ecuador, but the first ones to reach our country came from Panama. That is how they happen to be called Panama hats. The straw is prepared from the young leaves of another kind of palm which grows in the same region as the tagua palm. The Indians of Ecuador are so skillful in preparing and weaving the straw that Panama hats are an important export.

A lowland seaport and a highland capital. All the trade of Ecuador with distant lands is carried on through the seaport of Guayaquil. Find this city on the map (*B4*), and study Figure 29.

Since Guayaquil is located on the coast near the equator, it is a very hot place, and for many years it was so unhealthful that at times ships from distant lands were not allowed to stop there. With the help of health experts from the United States, the people of Ecuador have stamped out the fevers which made Guayaquil so dangerous, and today it is one of the most healthful tropical seaports in the world.

On the map find the railroad that runs from Guayaquil to Quito, the capital and second largest city of Ecuador. Quito is on a plateau more than a mile and a half above sea level, and so, although it is close to the equator, its climate is springlike the year round. Of what capital city in the northern Andes does this remind you? Where should you prefer to live — in Guayaquil or Quito?

The coastal region of Peru. From Panama to southern Ecuador the Pacific coast of South America is covered with tropical forests. South of Ecuador the forests disappear, and the coastal region of Peru is mostly desert. In spite of the little rain this is the most important agricultural section of Peru. Perhaps you can guess why. The land is level, and streams from the Andes provide water

Courtesy of the Pan American Union

Figure 29. The water front at Guayaquil, the seaport and largest city of Ecuador. This city is located near the mouth of the Guayas River, which flows into the northern end of the Gulf of Guayaquil, and its harbor is always calm and safe for ships.

From Ewing Galloway, N.Y.

Figure 30. Part of the water front at Callao. At the left is an ocean freighter. The sailing vessels at the right carry goods from port to port along the Pacific coast of South America.

for Lima. Here you will see many ships from distant lands loading and unloading goods at wharves along the shore. Because of its harbor and its nearness to Lima, Callao is the leading seaport of Peru. *See Figure 30.*

From Callao you can travel by train or automobile to Lima. Besides being the capital and largest city of Peru, Lima is the leading business and manufacturing center of the country. The streets in the business section are lined with stores, office buildings, and government buildings, and in the factories cotton goods, woolen goods, leather, shoes, and many other things are made.

Farther south is Arequipa, which is connected by railroad with the seaport of Mollendo. Arequipa is the second largest city in Peru and the business and manufacturing center of the southern part of the country.

for irrigation. Each river valley is a strip of farming land where the people raise sugar cane, cotton, rice, and other crops. So much sugar and cotton is grown on the irrigated lands that they are two of the leading exports of Peru.

At the northern end of the coastal region Peru has rich oil fields. Refineries have been built here, and both crude oil and refined oils are valuable exports.

Ports without harbors. The coast of Peru is so straight that there is only one good harbor for ships. But since both the coastal region and the Andean region provide products for export, the people have made many of the coastal towns seaports by building breakwaters some distance from the shore. These long walls of stone break the force of the waves and make the water on the landward side calm enough for ships to anchor. Find the seaports of Peru on the map. Name the exports of each one and tell what regions of Peru they come from.

Cities of the coastal region. The one good harbor on the coast is at Callao, the seaport

A check. The answers to the questions on page 22 are 1, Ecuador; 2, Boliva; 3, Peru. Look at the answers which you gave, and see if they are correct.

An export test. 1. Below is a list of the nine leading exports of the central Andean countries. Arrange them in three groups according to the countries where they are produced. Remember that some of them are produced in more than one country.

tin	cotton	cacao
mineral oils	sugar	rubber
copper	silver	coffee

2. Now group the exports according to the regions from which they come: (1) the montaña; (2) the Andean region; (3) the coastal region of Ecuador; (4) the coastal region of Peru. Describe the surface and climate of each region and tell about the work connected with its chief products.

Checking what you have learned. Copy the sentences below, filling each blank space with the name of a tropical country of South America. After you have finished, prove by the map that your work is correct.

1. The largest country in South America is _____.
2. Three European possessions in South America are _____ _____, _____ _____, and _____ _____.
3. The country that borders both the Caribbean Sea and the Pacific Ocean is _____.
4. The country that borders the Caribbean Sea only is _____.
5. The central Andean countries that border the Pacific Ocean are _____ and _____.
6. The central Andean country that has no coast line is _____.

Matching cities and ports. Each inland city named below uses some other city as its seaport. Match each city with its port:

Inland Cities	Ports
São Paulo	Puerto Colombia
Bogotá	Guayaquil
Caracas	Santos
Quito	Callao
Lima	La Guaira

Testing yourself. Each of the names listed below this exercise belongs to one of the following phrases. Write the names in their correct order.

1. Carries more water to the ocean than any other river in the world.
2. A city in the heart of the Amazon Lowlands.
3. A large river which flows through a thinly populated lowland in Venezuela.
4. Second largest city in South America.
5. A river which is a highway of travel and transportation in Colombia.
6. The seaport at the mouth of the Amazon.
7. The highest lake in the world used for transportation.
8. A sea directly north of South America.
9. A city which is the center of an important mining region in Peru.
10. Second largest city in Brazil and the "capital of Coffee Land."
11. A city which is the great business center of Bolivia.
12. The great river port of Colombia.

Magdalena	Amazon	Belem
Barranquilla	Caribbean	La Paz
Rio de Janeiro	São Paulo	Manáos
Cerro de Pasco	Titicaca	Orinoco

III. TEMPERATE SOUTH AMERICA

Foreword. Turn to the map on pages 24–25, and name the countries of South America which are wholly, or almost wholly, in the south temperate zone. Which ones border the Atlantic Ocean? Which one borders the Pacific Ocean? Which one has no seacoast? In what months do the children of the temperate countries of South America have their summer vacation from school?

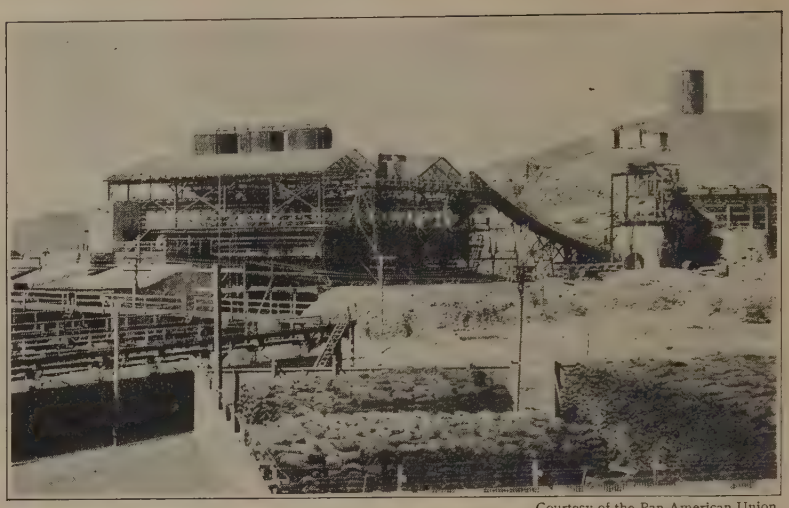
Have you ever heard people speak of the "A B C countries" of South America? They mean the three leading countries — Argentina, Brazil, and Chile. What reason can you suggest to explain why the two largest *temperate* countries of South America are among the three leaders?

The other two temperate countries are much smaller. Of the two Uruguay is much the more important, though it is less than half as large as Paraguay. Can you suggest any reason for this?

The map shows that much of Argentina, all of Uruguay, and most of Paraguay are in the temperate plains of South America. What kinds of work do you expect to find going on in those plains? Chile is quite different from the other temperate countries because much of it is mountainous. What kinds of work do you think the people of Chile do?

As you study this chapter, keep in mind the questions asked in this foreword, and see if you have answered them correctly.

Figure 31. Broken caliche in a nitrate field, and the train which will carry it to an oficina for refining.



Courtesy of the Pan American Union

Figure 32. A nitrate oficina. From the crusher at the right the caliche is carried on a moving belt up to the refining tanks at the left. In the foreground are bags of nitrate ready for export.

1. Chile — the Temperate Andean Country

People sometimes call Chile "the sliver of South America" because it is so long and narrow. It stretches along the Pacific coast for 2700 miles, and is more than ten times as long as it is wide. The map shows that the northern end of Chile extends into the torrid zone. Cape Horn, at its southern end, is almost as far south of the equator as the southern tip of Alaska is north of the equator. What does that suggest to you about the differences in temperature between northern and southern Chile? What does Figure 4 on page 4 tell you about the differences in rainfall?

On Figure 5 on page 4 find the most densely populated part of Chile. Notice that this is the central part. As you study this section, find reasons why central Chile has so many more people than the rest of the country.

A rich desert. In northern Chile, between the Andes and the coast ranges, is the Atacama Desert. This is one of the driest regions of the whole earth, and in many parts of it not a drop of rain has fallen for years and years. There are no trees or grass, and only one river from the Andes flows across the desert to the sea. Yet this region has brought more wealth to Chile than any other part of the country. Do you know why? Find the Atacama Desert on the map on pages 24–25, and see if you can discover the reason.

Did the word "nitrate" on the map make you think of the fertilizer factories in our country? One of the most important minerals used in making fertilizers is nitrate, and the Atacama Desert is the only region in the world where nitrate is found in great enough quantities to be mined. Chile provides nearly all the world's supply.

Work in the nitrate fields. Thousands of men work in the desert, mining the nitrate and preparing it for export. The rock which contains the nitrate is called *caliche*, and is found in layers a few feet beneath the surface of the ground. The workmen bore holes down into the caliche and put dynamite in them. Then they explode the dynamite, and the caliche and the rock that covers it are blown high into the air. The broken caliche is then taken to refining plants called *oficinas*. *See Figure 31.*

At the oficinas the caliche is crushed and then put in huge tanks of boiling water. The hot water dissolves the nitrate, separating it

from the worthless materials of the caliche, which sink to the bottom of the tanks. Then the water with the nitrate dissolved in it is run into huge pans, and as it cools and evaporates the nitrate changes into white crystals. The crystals are dried and later put into bags for export. *See Figure 32.*

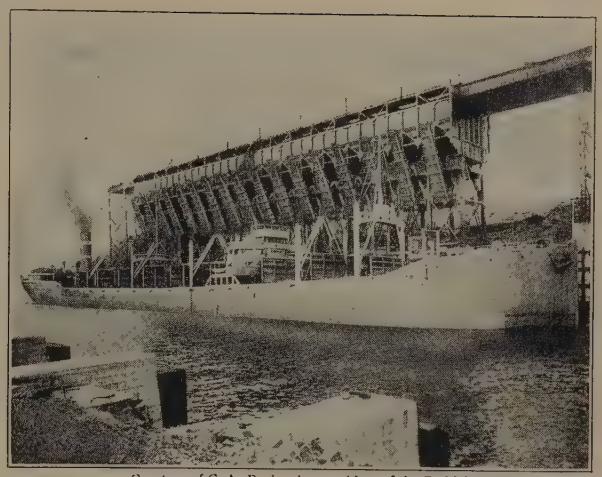
Another product which is obtained in the refining of nitrate is the drug known as iodine. No doubt you have seen iodine, for it is often used in treating cuts and bruises. Each nitrate company produces iodine, but its value is small compared with that of the nitrate.

Everything that is needed in the nitrate fields must be brought from outside the desert. Water comes through long pipe lines from the melting snows in the Andes. Food for the workmen, mining tools, machinery, and all other supplies come by train from the seaports or from central Chile.

The nitrate ports. From each oficina the nitrate goes by train to the nearest seaport. There are nine "nitrate ports" in all, and not one has a natural harbor. Here, as on the coast of Peru, towns without harbors have become busy seaports because the region behind them has valuable products for export. Only the three leading nitrate ports are shown on the map. What are their names? To what parts of the world does most of the nitrate go?

Other mineral wealth of Chile. On the map find a place in the northern desert of Chile where copper is mined. There is a whole mountain of copper ore here which belongs to a great copper-mining company of the United States. Huge steam shovels dig the ore from the mountain sides, and little cars that slide down steel cables carry it to buildings where the metal is separated from the rock. This is the greatest copper-mining camp in the world, and every week long trainloads of copper bars are sent to Antofagasta for export to the United States.

On the map find a copper-mining center in central Chile. This and the one in the northern desert make Chile the second copper-mining country in the world. Our own country is first.



Courtesy of C. A. Buck, vice president of the Bethlehem Steel Company

Figure 33. A boat loading iron ore at Cruz Grande in Chile. What canal will it pass through on its way back to the eastern part of the United States?

Turn to the map again, and find a port of Chile from which iron ore is exported to the United States. There you will see ocean freighters loading ore at docks like those at Duluth. The ore comes by electric railway from mines six miles away. The mines, the railway, and the docks belong to a great steel company of Pennsylvania. *See Figure 33.*

The Central Valley of Chile. On the map on pages 24–25 find the valley lowland which extends from north to south through central Chile. Notice that it lies between the Andes and the coast ranges. In this lowland and the bordering coast land live nine tenths of all the people of Chile.

Central Chile is like California in so many ways that it is often called "the California of South America." The location of the Central Valley is like that of the Valley of California, with high, snow-capped mountains on the east and low coast ranges on the west. The climate too is much the same. The rainfall is light and comes mostly in the winter, while the summers are hot and dry. The

Figure 34. A view of the snow-capped Andes from Santiago. Why has Santiago a larger population than any of the capital cities of the central Andean countries farther north?

northern part of the region has too little rain for farming, but streams from the Andes provide water for irrigation.

A mixed-farming region. The Central Valley is the only part of Chile which is well suited to farming. The land is level, the soils are rich, and the growing season is long. Most of the farmers carry on mixed farming.

The climate is especially good for winter wheat, and this is the leading crop. The farmers plant the wheat in May or June, just before the winter rains begin, and harvest it in the summer month of January. The farmers also raise barley, oats, corn, alfalfa, beans, and potatoes. The corn and alfalfa are used mostly to feed cattle, sheep, and other live stock on the farms.

Near the larger cities there are dairy farms and market gardens. The climate of the northern part of the valley is so mild that vegetables can be grown out of doors on the irrigated lands all winter long.

Fruit-growing. Like California, central Chile is a wonderful fruit-growing region. Almost every kind of fruit grows there — grapes, apples, peaches, plums, oranges, lemons, and many others. Grapes are by far the most important and are grown principally for making wines. Many of the fruits are canned, and many are dried in the bright summer sunshine, as they are in California, and both fresh and preserved fruits are exported to neighboring countries.

The capital of Chile and its seaport. On the map on pages 24–25 find Santiago, the capital of Chile, and Valparaiso, its seaport (*B7*). Santiago is one of the four largest cities of South America. It has a beautiful location near the northern end of the Central Valley of Chile, within sight of the snow-capped Andes, and its climate is so mild that flowers bloom the year round. Long, well-paved avenues run through the city, lined with fine public buildings and private houses. The business section of the city has many stores and office buildings, for Santiago is the business center of Chile. *See Figure 34.*

From Santiago it is 117 miles by railroad to Valparaiso. This city is the largest seaport on the Pacific coast of South America. The bay on which it is located is very deep, but it does not form a good natural harbor because it opens broadly on the ocean. For this reason the people of Valparaiso are building breakwaters to make the harbor safer. The reason why Valparaiso has become the leading Pacific seaport of South America is that it is the ocean gateway for the most densely settled temperate region west of the Andes. *See Figure 35.*

Manufacturing in central Chile. Chile is not a great manufacturing country, but there are mills and factories in Santiago, Valparaiso, and some of the cities farther south. Among them are flour mills, tanneries, shoe factories, textile mills, and clothing factories. Although

they supply some of the needs of the Chilean people, most of the manufactured goods are imported from distant lands.

Chile is better suited to manufacturing than most of the South American countries because it has coal. On the map find a place in the Central Valley where coal is mined. Besides this, the streams from the Andes provide abundant water power in central and southern Chile, and some day much hydroelectricity will be used for manufacturing.

Courtesy of the Pan American Union

Figure 35. The harbor at Valparaiso. What kinds of goods do ships bring to Valparaiso from distant parts of the world? What Chilean products do they carry away?

Fiords and forests of the south. Turn to the map, and study the coast of southern Chile. Notice that it is much like the coast of southeastern Alaska. The mountains rise steeply from the sea, and deep, narrow bays, or *fiords*, lead far into the land. Offshore there are many islands, and between these and the coast there is an "inside passage" for ships, like the one along the Alaskan coast.

You will remember that the coast of southeastern Alaska is very rainy because of the westerly winds which blow toward it from the ocean. Southern Chile is very rainy for the same reason, for it lies in the path of the westerly winds in the Southern Hemisphere. Explain why these winds bring so much rain to southern Chile.

Because of the heavy rainfall southern Chile is covered with temperate forests. The trees are not so large as those in western Oregon and Washington, but they make southern Chile one of the two most important lumbering regions of South America. Where is the other?

Farthest south in South America. On the map on pages 24–25 find the city of Magallanes (*B9*). This is the southernmost city in the world. Notice that it is located on the Strait of Magellan, which separates the large island of Tierra del Fuego from the mainland of South America. This southernmost part of South America is cold, rainy, and often swept by terrible winds and storms from the ocean. The climate is too cool for farming, but the region is well suited to the raising of sheep. Some of the sheep ranches here are among the largest in the world, and Magallanes is an important port for the shipment of wool and mutton.

Finding endings. Choose the right ending for each of the sentences below:

1. There is no farming in northern Chile because of its
rough surface. dry climate. poor soils.

2. Northern Chile has many seaports because of its
natural harbors. railroads. nitrate fields.

3. The Central Valley is the leading farming region of Chile because it has level land, a long growing season, and much
rainfall. sunshine. water for irrigation.

4. Southern Chile is not well suited to farming because of its
poor soils. mountainous surface. little rain.

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Figure 36. A train on the Transandine Railway. This railroad was very hard to build, and it cost a huge sum of money. What reason can you give for this?

Snapshots. Don't you like to take pictures? Where could you take these pictures in Chile?

1. Write these headings on a piece of paper:

Northern Chile *Central Chile* *Southern Chile*

2. Write the titles of your pictures of Chile under the names of the regions where you take them: a fruit farm; a lumber camp; a nitrate oficina; a wheat field; an iron-ore mine; a sheep ranch; an irrigated farm; a manufacturing city; a copper mine; a dairy farm; a market garden.

3. At the bottom of your paper copy these sentences, filling the blank spaces correctly:

a. My pictures show that the region that has the most kinds of work is _____ Chile.

b. _____ Chile is the most densely populated part of the country because _____.

Loading ships at Chilean ports. 1. Write these headings on a piece of paper:

Product *Loaded at* *Sent to*

2. Write the names of the following products under the first heading: nitrate, copper, iodine, wool, grain, mutton, iron ore.

3. Opposite each product write the name of a Chilean port where it is loaded on ships, and the countries to which it is sent. You may use the map (pp. 24–25) as a help.

2. The Plata Countries (Argentina, Paraguay, and Uruguay)

One of the most interesting trips in South America is from Valparaiso to Buenos Aires over the Transandine Railway. You start at the Pacific coast, and in the first hundred miles your train climbs upward more than 10,000 feet to the Uspallata Pass through the Andes.

Instead of running over the mountain pass, your train runs through a tunnel under it, and comes out on the Argentine side of the Andes. From there you travel down the eastern slope of the Andes and across the level Pampa of Argentina to Buenos Aires on the Plata River. The trip takes thirty-six hours, and it carries you from the greatest Pacific seaport of South America to the greatest Atlantic seaport. *See Figure 36.*

Turn to the map on pages 24–25, and find the Plata River (*D7*). You will see that it looks more like a bay than a river, and that it carries the waters of the Paraná, Paraguay, and Uruguay rivers to the Atlantic Ocean. The plains which these rivers drain are called the Paraná Lowlands, and they include most of Paraguay, Uruguay, and northern Argentina. These three countries are often called the Plata countries because nearly all their trade with distant lands is carried on by way of the Plata River.

One way to measure the importance of countries is to compare their trade. You already know that Argentina is one of the A B C countries of South America. In size and population it stands second among the South American countries, but in trade with distant lands it stands first. Uruguay is the smallest South American country, yet in trade it stands fifth. Only the great A B C countries and Colombia rank higher. Paraguay is larger than Uruguay, yet it carries on less trade than any other South American country except Ecuador. How, then, do the three Plata countries rank in order of importance?

As you study the Plata countries, make a list of reasons that help to explain (1) the leadership of Argentina in trade, (2) the high rank of little Uruguay, and (3) the low rank of Paraguay.

Getting acquainted with Argentina. Turn to the map on pages 24–25, and study the shape and surface of Argentina. Notice that the country is broadest at the north and that it narrows to a point at the south. Notice also that along its western border Argentina shares the high, rugged Andes with Chile. Find Mount Aconcagua on the boundary line between the two countries (*C7*). This is the highest mountain peak in the Americas.

Courtesy of Department of Agriculture, Buenos Aires, Argentina

Figure 37. Sheep in southern Argentina. This picture was taken in the spring after the sheep had been sheared. At what port in our country might you see wool from South America?

The rest of Argentina is mostly a vast plain, extending north and south for over 2000 miles. The northern end of the plain is warm the year round, for it extends across the tropic of Capricorn into the torrid zone. The southern end, bordering the Strait of Magellan, is cool in summer and bitterly cold in winter.

As you would expect, the difference in temperatures between the northern and southern parts of the Argentine plain makes a great difference in the way the people get their living. There are differences of rainfall too, which you will discover as you learn more about Argentina.

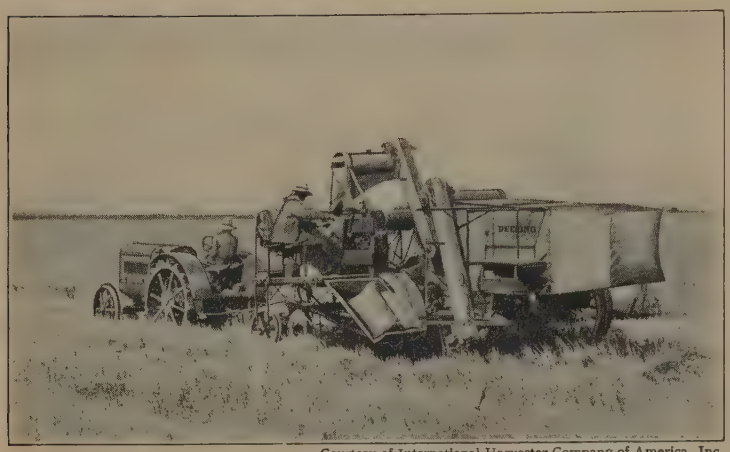
Patagonia and its sheep ranches. On the map on pages 24–25 find the Negro River (*C8*). South of this river is the part of Argentina known as Patagonia. Turn to Figure 4 on page 4, and tell how much rain falls in Patagonia each year. You will remember that the westerly winds cause heavy rainfall on the western side of the Andes in southern Chile. Patagonia, on the eastern side, is dry for the same reason that the plateaus east of the Sierra Nevada and Cascade Range in our own country are dry. Explain the reason.

You may think of Patagonia as a land of few people and many sheep. Sheep-raising is the only work of importance because the climate is too dry for farming and the grass is too poor for cattle. The ranches are very large, for in order to keep enough sheep to make a living each ranchman must have thousands of acres of grazing land. *See Figure 37.*

The sheep are raised mostly for their wool, and the shearing begins in the spring month of November. Wagons drawn by horses or oxen carry the wool to the nearest railroad stations or to ports on the coast for shipment to Bahia Blanca. Find Bahia Blanca on the map (*C7*). There the wool is loaded on ocean ships for export.

The Pampa. The great plain known as the Pampa extends northward from Patagonia to the latitude line of 30°, and makes up about one fourth of Argentina. Find this region on the map.

Vast stretches of the Pampa are so level that a house, a barn, or a straw stack stands out clearly against the sky. Turn to Figure 4 on page 4, and study the rainfall of the Pampa. Notice that the rainfall is rather light over the whole region, and that it grows less from east to west. This should remind you of the distribution of rain in our own interior plains.



Courtesy of International Harvester Company of America, Inc.

Figure 38. Harvesting wheat on the Pampa with a harvester-thresher made in the United States. The man nearer you catches the wheat in a sack as it comes from the thresher.

Because of the light rainfall, most of the Pampa is a vast grassland, with no trees except where the people have planted them for shade. In this way it is much like our prairies and Great Plains, and it is one of the best farming and grazing regions in the world. The level surface makes it easy for the farmers to use farming machinery; the grass provides millions of acres of pasture lands; and the climate is so mild that cattle and sheep can graze out of doors at all seasons of the year.

Argentine wheat lands. On the map find the part of the Pampa where wheat is the leading crop. The wheat lands form a crescent-shaped belt extending from the western bend of the Paraná River in the north to Bahia Blanca in the south. The farms in this part of the Pampa will remind you of those in the winter-wheat lands of our country. In May, June, and July,—late autumn and early winter in Argentina,—you will see the farmers sowing wheat with big machine drills. In November, December, and January,—late spring and early summer,—you will find them harvesting their crops with harvesting machines and harvester-threshers. *See Figure 38.*

In Argentina you will miss the great grain elevators which you found along the railroads in our own wheat lands. The Argentine wheat farmers put their grain into sacks and stack them in the fields. Teamsters with huge wagons drawn by horses, mules, or oxen collect the sacks of wheat from the farms and carry them to the railroads. *See Figure 39.*

Although this part of the Pampa produces huge quantities of wheat, it is not a one-crop region. Most of the farmers have herds of beef cattle and raise alfalfa to feed and fatten them. Alfalfa, you will remember, grows well in regions of light rainfall, and it is as good as corn for fattening live stock. In the Pampa the climate is so mild that alfalfa grows in winter as well as in summer, and the farmers get from three to six crops a year.

The Argentine corn belt. The corn belt of Argentina is east of the northern part of the wheat lands, and extends to the Paraná River.

Courtesy of Department of Agriculture, Buenos Aires, Argentina

Figure 39. Sacks of wheat piled beside a railroad track in the Pampa. Trains carry the wheat to Rosario, Buenos Aires, and Bahia Blanca for export. To what parts of the world does it go?

Here there is more rain than in the wheat lands, and corn is the principal crop.

When you visited the corn belt in our country, you learned that most of the corn is used to fatten cattle and hogs on the farms. The corn-belt farmers of the Pampa raise most of their corn as a money crop for export to distant lands. Argentina is the leading corn-exporting country of the world.

In the Argentine corn belt the farmers who keep cattle fatten them on alfalfa. As you might expect, many of the farmers raise hogs also, using both corn and alfalfa to feed them. Hogs are not so important, however, as they are in our own corn belt.

Another important crop in the Argentine corn belt is flax, which is raised for its seeds. You will remember that flaxseed is known as linseed and that it is used to make linseed oil.

A dairying section. On both sides of the Plata River, in Uruguay as well as in Argentina, there are many dairy farms. Study the population map (Figure 5 on page 4), and explain why dairying is so important on the shores of the Plata.

Dairying has grown very fast in this section in the last few years, and there are many butter factories and cheese factories. Besides the dairy products which are sent to the cities, considerable quantities of butter and cheese are exported. In this section there are also market gardens and orchards which supply the cities with vegetables and fruits.

The part of the dairying section which is in Uruguay is the only important farming district of that country. There, besides the dairy farmers and market gardeners, there are many farmers who raise wheat, corn, oats, barley, and flax.

Two great ranching sections. The map on pages 24–25 shows that most of Uruguay is a land of cattle and sheep. These great grazing lands extend far beyond the boundaries of Uruguay, and include southern Brazil and the Paraná Lowlands of northeastern Argentina and southern Paraguay. Farther south, in Argentina, another great grazing section extends across the eastern part of the Pampa from the wheat lands to the ocean.

Courtesy of Swift & Company

Figure 40. An Argentine boy on his pony. Instead of a coat, he wears a woolen blanket called a *poncho*. All Argentine ranch boys are good horseback-riders.

A visit to an estancia. The great ranches of these grazing lands are called *estancias*, and many of them cover a hundred square miles or more. At the headquarters of each estancia is the owner's house, which is built round an open court, or *patio*, in the Spanish style. Trees planted near the house give shade and shelter from the wind, and flowers make the patio a lovely garden. Close by are many other buildings, where the ranch workers live.

Figure 40 is a picture of Luis Alcorta, an Argentine boy, whose father owns a great estancia in the eastern part of the Pampa. He goes to school in Buenos Aires, where his father has another house; but in vacation time you will find him at the estancia.

Luis will lend you a pony like his own to ride, and will take you out to see the cattle and sheep. He will tell you that the ranch covers 150 square miles, and that his father owns 15,000 cattle and 100,000 sheep. He will also tell you that it takes more than 500 people to do all the work on the estancia.

Courtesy of Swift & Company

Figure 41. Cattle on an Argentine estancia. They have been fattened on alfalfa and are ready to be sent to market. Argentine beef is considered very fine, and large quantities are exported.

Among them are large numbers of cowboys and sheep-herders, who spend most of their time on horseback tending the cattle and sheep. *See Figure 41.*

As you ride over the grazing lands, you will see that the pastures are fenced with wire, and that some are for cattle and some are for sheep. As soon as the animals have eaten the forage in one pasture, the cowboys and sheep-herders drive them to another. You will find that some of the cattle are grazing on grass, while others are grazing on alfalfa. Luis says that his father is planting more and more of his land to alfalfa because it makes better feed for the stock than the grass does.

Luis's father keeps some of his sheep for wool and some for mutton. All his cattle are beef cattle. When the time comes to send the meat animals to market, the cowboys and sheep-herders drive them to the nearest railroad. There they put them into cars which carry them to Buenos Aires or La Plata, where there are great meat-packing plants. *See Figure 42.*

The shearing of the sheep begins in the spring month of November. The herders bring the sheep together at several different places on the estancia and clip the wool with electric shears. The wool is packed in bales, loaded on carts, and taken to the railroad. Sometimes Luis's father sends his wool to Buenos Aires and sometimes to Bahia Blanca. From these seaports ships carry the wool to distant lands.

You will find the ranches in Uruguay and northeastern Argentina much like Luis's ranch, except that in Uruguay the natural grass is so rich that the ranchmen do not pasture their stock on alfalfa.

Irrigated lands. On Figure 5 on page 4 find the most densely settled parts of western Argentina. This section of the country has little rain, and the more thickly settled parts are "oases" such as you found in some places in the dry plains and plateaus of the United States. They are located where streams from the Andes provide water for irrigation.

On the map on pages 24–25 find the cities of Mendoza (*C7*) and Tucumán (*C6*). If you had stopped off at Mendoza on your way from Valparaiso to Buenos Aires, you would have found yourself in an oasis where thousands of acres of irrigated lands are covered with vineyards. Many different kinds of grapes are raised there, chiefly for making wines. *See Figure 43.*

The irrigated district farther north is close to the tropic of Capricorn, in the warmest part of the temperate zone. Because of the long growing season, it has become Argentina's cane-sugar district. The sugar plantations are much like those which you have seen in other

Courtesy of Armour & Company

Figure 42. Beef cattle at a meat-packing plant at La Plata. This plant belongs to a great meat-packing company whose headquarters are in Chicago.

parts of South America. The cane is crushed and the raw sugar prepared in mills on the plantations. Some of the raw sugar is refined in Tucumán and other cities of the region, but more of it goes to cities nearer the coast for refining.

Other products of the irrigated lands are alfalfa, corn, fruits, and vegetables. Many of the farmers have dairy herds, and many raise beef cattle. In the summer, cattle are driven over the Andes and sold in the mining centers of the Atacama Desert of Chile and the Plateau of Bolivia.

Both Tucumán and Mendoza owe their growth to irrigated farming. They are centers for the shipment of products of the "oases" and for the distribution of manufactured goods to the people on the surrounding farm lands.

A crop and live-stock test. This test will help you to review what you have learned about farming and stock-raising in Argentina.

1. The Pampa is a great farming and grazing region because _____.

2. The two leading crops of the Pampa are

oats. wheat. potatoes. corn. flax.

3. The two leading kinds of live stock raised on the Pampa are

horses. cattle. mules. hogs. sheep.

4. The Argentine corn belt is east of the wheat lands because _____.

5. Wheat and corn are raised in Argentina chiefly for

food. feed for live stock. export.

6. The dairying section of Argentina borders the Plata River because _____.

7. The two leading crops of the irrigated lands in Argentina are

wheat. sugar. rice. corn. grapes.

8. The ranchmen in Patagonia raise sheep rather than cattle because _____.

The Gran Chaco. Turn to the map on pages 24–25, and find the region which is called the Gran Chaco (*C–D 6*). Notice that it extends from northern Argentina across western Paraguay into Bolivia. On the east it extends to the Paraná and Paraguay rivers.

Courtesy of Department of Agriculture, Buenos Aires, Argentina

Figure 43. Vineyards near Mendoza, in western Argentina. The Spanish-Americans drink light wine with their meals, and so the raising of grapes and the making of wine provide work for many people.

This region is a low plain, partly grassland and partly forest. Its location makes it warm the year round, and like the Orinoco Lowlands, it has a rainy season and a dry season. During the dry season, which comes in the winter, so little rain falls that the grass withers and turns brown. During the rainy season the rivers overflow their banks and flood large stretches of land.

As you would expect, few white people have cared to settle in this region. Its population is small, and most of the people are Indians. In places cattle-raising is carried on, but the Chaco is a rather poor region for this kind of work. Can you explain why? If not, review what you learned about cattle-raising in the Orinoco Lowlands.

Farming too is of little importance, though the Indians raise a few crops for food. In one place, however, people have moved into the Chaco of Argentina to raise cotton. Find this place on the map, and notice the railroad which passes through it. The railroad has led many new settlers to make their homes here, and each year more cotton is being raised.

Forest work. The most important work in the Gran Chaco is connected with the forests in the eastern part of the region. One of the trees that grows there is the *quebracho*. The word *quebracho* means "ax-breaker." The wood of this tree is very hard, and it provides tannin, which is used in the tanning of leather.

In the quebracho forests you will see many Indians at work chopping down the trees and cutting off the bark. From the forests the logs are sent to factories known as extract plants. There they are chipped into small pieces, and the chips are boiled in hot water to extract the tannin. As a result of this work, the tanning material known as quebracho extract is obtained. This material is a jelly-like substance. It is pressed into bags, and after it has been dried it is ready to be shipped away. Large quantities of quebracho extract are used in the tanneries of our country.

In places the quebracho trees are cut for lumber, and the logs are sent to sawmills along the rivers. Quebracho wood makes strong beams, railroad ties, and fence posts; and considerable quantities of these forest products are exported from the Chaco to other parts of South America.

The Paraguayans and their country. Most of the Paraguayans are mestizos, while most of the Argentinos and Uruguayans are white people. This difference in people is one reason why Paraguay has grown so much more slowly than Argentina and Uruguay. There are other reasons which you will discover as you read the next paragraphs.

The map shows that nearly half of Paraguay is west of the Paraguay River, in the Gran Chaco. You already know why so few people live in that region. On the east, Paraguay shares the yerba-maté forest with Brazil. Here too there are few people. The forests make the land hard to clear for farming; the warm, moist climate is rather unhealthful; and no railroads connect the region with the outside world.

Where most of the Paraguayans live. Nearly all the people of Paraguay live in the lowland east of the Paraguay River. This region has fertile soils, plenty of rain, and a long growing season; and it is well suited to farming and cattle-raising. Unfortunately, most of the farmers are mestizos who have never cared about making the best use of their land. They raise corn, rice, sugar cane, and other crops for food, but the only crops raised in large enough quantities for export are tobacco, cotton, and oranges.

There are a few large, well-managed estancias where the cattle are carefully tended and make good meat animals. Elsewhere most of the cattle are of poor quality, and hides, rather than meat, are exported.

Until very recently the Paraguayans have used old-fashioned methods of farming and have been careless in tending their cattle. For this reason neither farming nor stock-raising has brought them much wealth. In the last few years they have been learning better ways to do their work, and their trade with other countries is now increasing.

Courtesy of the Pan American Union

Figure 44. Part of the river front at Asunción. The boats in the picture have brought passengers and goods to Asunción from Buenos Aires. Trace their route on the map on pages 24–25.

Asunción — capital and river port. On the map on pages 24–25 find Asunción, the capital and largest city of Paraguay (*D6*). On what river is it located?

Asunción is an attractive old Spanish city with wide, shady streets and low buildings seldom more than two stories high. The houses look very plain from the street, but they are built around pleasant patios where flowers blossom at all times of year.

The busiest part of the city is the river front. There you will see boats which run back and forth between Buenos Aires and Asunción, carrying passengers and goods. You will also see boats which have come downstream from cities farther north, and you will realize that the Paraguay River is the great highway of travel and transportation through the country. *See Figure 44.*

A few short railroads connect some of the quebracho centers and some of the larger estancias with the Paraguay River, but the only railroad which connects Paraguay with the outside world is the one which runs from Asunción to Buenos Aires. Trace the route of this railroad on the map.

What Paraguay needs most. The greatest hindrances to the growth of Paraguay are its inland location, far from the sea, and its lack of railroads. All its trade with distant lands must be carried on through ports on the Plata River. Buenos Aires, the greatest of these ports, is a thousand miles from Asunción by train or boat. The river trip between the two cities takes four or five days, while the railroad trip takes but two.

What Paraguay needs most is more railroads to connect all parts of the country with the Paraguay River, and to connect the country as a whole with Buenos Aires. When more railroads are built, more settlers from Europe will go to Paraguay; more farming, stock-raising, and forest work will be carried on; and more wealth will come to the country through trade with distant lands.

Where transportation is best in South America. Turn to the map on pages 24–25, and study the network of railroads in Uruguay and Argentina. Notice that the railroads of Uruguay spread out in fan shape from its seaport of Montevideo, while those of Argentina spread out in the same way from its seaports of Buenos Aires and Bahia Blanca.

Nowhere else in South America are there so many miles of railroads. One reason for this is the level surface, which makes railroad-building easy. Another, and far more important, reason is that these temperate plains are among the richest farming and grazing

From Ewing Galloway, N. Y.

Figure 45. Grain elevators along the water front at Buenos Aires. Ships from many countries of Europe come to this great port to take on cargoes of Argentine wheat and corn. Argentina leads all the countries of the world in the export of corn, and ranks next to Canada and the United States in the export of wheat.

lands of the world. Since they produce huge quantities of foodstuffs and raw materials which are needed in the manufacturing countries of the Northern Hemisphere, it has been worth while to build railroads to carry these products to the coast.

Can you picture the trains loaded with grain, wool, cattle, sheep, and other products of the farms and ranches speeding over these railroads from the north, the west, and the south, bound for the Atlantic seaports? And can you picture them as they speed back, carrying manufactured goods and many other things for the people on the farms and ranches?

The largest city of South America. Buenos Aires is the greatest of the ocean gateways through which the products of the temperate plains of South America pass on their way to distant lands. It is the capital of Argentina, the largest city of South America, and the fourth largest in the Western Hemisphere. Only New York, Chicago, and Philadelphia are larger. About one fifth of all the people of Argentina live in this great seaport.

The people of Buenos Aires are very proud of their beautiful city. Built on level land, its streets are broad and straight, and, except in the crowded business sections, they are shaded by carefully tended trees. Electric-car lines connect all parts of the city, and a subway carries passengers underground. The government buildings, business blocks, banks, hotels, and theaters are as fine as any in our country.

On the streets in Buenos Aires you will see many foreigners, or people from other countries. Most of them are people from western Europe and the United States who have come to Argentina to carry on business. There are so many foreigners in Buenos Aires that some of the daily newspapers are printed in Italian, German, and French, as well as in Spanish.

A great seaport. Find Buenos Aires on the map on pages 24–25 (*D7*). Notice that it is located on the south side of the Plata River, a long distance from the open sea. The land bordering the Plata is low and flat, and near Buenos Aires the river is shallow. For this reason the people of Buenos Aires have had to

make their harbor. To do this they have dug deep, oblong-shaped basins leading from the river into the land. Each basin is bordered by long stone wharves where the largest ocean ships can load and unload their cargoes. *See Figure 45.*

No matter when you visit Buenos Aires, you will see ships of all kinds at the wharves—huge ocean liners from Europe and the United States, ocean freighters from all parts of the world, and river boats which have come down the Paraná. Turn to the map, and name the more important things that ships from the United States and Europe bring to Buenos Aires. Then name the products of Argentina which they carry away.

Figure 46. Part of the water front at Montevideo. From the map name the exports of Montevideo. What do they suggest about the importance of stock-raising compared with farming in Uruguay?

Manufacturing in Buenos Aires. As you might expect, the largest city and chief seaport of Argentina is also the leading manufacturing center. Among the manufacturing plants of Buenos Aires you will find flour mills, meat-packing plants, sugar refineries, tanneries, shoe factories, textile mills, and clothing factories. You will see from this list that the leading manufactures are those which make use of raw materials produced in Argentina. For the greater part of their manufactured goods the Argentinos depend on imports from Europe and the United States.

Other Argentine cities. East of Buenos Aires, on the Plata River, is La Plata. More beef and mutton are shipped from here than from any other Argentine port.

About 200 miles up the Paraná River from Buenos Aires is Rosario, the second largest city of Argentina and the second most important port. Find this city on the map on pages 24–25 (*C7*). Rosario is the great business center for the Argentine corn belt and the northern part of the wheat lands, and it exports even more grain than Buenos Aires.

Farther inland, on the western margin of the wheat lands, is Córdoba. Find this city on the map (*C7*). Like so many cities in our own interior plains, Córdoba has grown up as a market center for the neighboring farm and ranch lands. It has flour mills, tanneries, and other manufacturing plants which use raw materials produced close by.

Uruguay's capital and seaport. At Buenos Aires you can step into an airplane and fly across the Plata River to Montevideo, the capital and seaport of Uruguay. Nearly one fourth of all the people of Uruguay live in Montevideo, making it by far the largest city in that country.

Like Buenos Aires, Montevideo is a beautiful city with broad streets, fine public buildings of all kinds, and pleasant homes. Since all the main railroads of Uruguay meet here, three fourths of all the trade of the country passes through this one port. *See Figure 46.*

Uruguay, like Argentina, carries on little manufacturing except the kinds which are

Courtesy of the Pan American Union

Figure 47. Preparing jerked beef at Montevideo. Jerked beef is beef which has been salted and dried, and it keeps a long time, even in the tropics. Most of the exports of jerked beef go to Brazil and Cuba.

connected with its leading products. Since it is largely a stock-raising country, its manufactures are few. Chief among them are meat products. There are large meat-packing plants in Montevideo, two of which are owned by companies in the United States. *See Figure 47.*

Countries with little mineral wealth. Argentina, Uruguay, and Paraguay have less mineral wealth than any of the other South American countries. In the Andean region of northwestern Argentina there are metal ores, but very little mining is done because the region is so far from the coast.

In Patagonia, Argentina has a valuable oil field. Find this place on the map. Each year the oil production is increasing, but as yet it is less than that of Peru or the Caribbean countries, and mineral oils are imported.

None of the three Plata countries has any iron or coal, and all the coal that is used is imported from Europe. The lack of these minerals is a great hindrance to manufacturing, and the Plata countries will probably never be great leaders in this kind of work.

The Falkland Islands

British possessions. On the map on pages 24–25 find the Falkland Islands, which belong to Great Britain (*C–D9*). These islands are so far south that they are too cold for farming, and the people get their living chiefly by raising sheep. Whales are caught in the cold waters south of the Falklands, and whale oil and wool are sent to Great Britain. What do the people of the Falkland Islands import from Great Britain?

The Trade of South America

In studying the exports and imports of the South American countries you have learned that the trade is mostly with the densely populated manufacturing countries of Europe and with the United States. You can easily understand why when you remember that South America produces large quantities of foodstuffs such as wheat, corn, meat, and coffee, and of raw materials such as wool, hides, nitrate, and metals. The foodstuffs are needed in Europe and our country to help to feed the people, and the raw materials are needed for the mills and factories.

In return, South America needs the manufactured goods which Europe and the United States can supply. Most of the South American countries have little or no coal, and none of them carries on much manufacturing. Therefore the South Americans need to buy a great variety of manufactured products, especially machinery and other manufactures of iron and steel.

This exchange of products through trade is of great benefit to all the countries which have a part in it. South America provides valuable markets for products of the mills and factories of our country and Europe, and we, in turn, provide valuable markets for the products of the farms, ranches, and mines of South America.

A Review of South America

Can you name these countries? 1. The largest temperate country of South America is _____.

2. The smallest temperate country is _____.

3. The temperate country without a seacoast is _____.

4. The temperate country bordering the Pacific coast is _____.

An export test. 1. Write these headings on a sheet of paper:

Farm products *Ranch products* *Forest products*

2. The map on pages 24–25 gives the ten leading exports of the Plata countries. Write the name of each export under the proper heading on your paper.

3. When you have finished, copy the following sentence, filling the blanks correctly:

My lists show that most of the exports of the Plata countries are ____ products and _____ products.

A map test. 1. On an outline map of South America print these names in the correct places, doing the work from memory:

Atlantic Ocean	Paraná River
Pacific Ocean	Paraguay River
Caribbean Sea	Andes Mountains
Strait of Magellan	Brazilian Highlands
Amazon River	Guiana Highlands
Orinoco River	The Pampa
Plata River	Patagonia

2. Print the name of each South American country in the correct place.

3. When you have finished, check your map by the map on pages 24–25 to make sure that you have made no mistakes.

Matching countries and capitals. Below is a list of the capitals of the independent countries of South America. Name the countries in the order in which the capitals are listed.

Rio de Janeiro	Quito	Lima
Buenos Aires	Bogotá	Sucre
Montevideo	Asunción	Caracas
	Santiago	

Finding reminders. Haven't you heard people say "This place reminds me of _____?" Tell where a person from each of the following places in North America would find a place in South America to remind him of home:

(1) The Valley of California; (2) the wheat lands of Kansas; (3) southeastern Alaska; (4) the corn belt of the United States; (5) the copper-mining district of Montana; (6) a coffee plantation in Central America; (7) the sugar-cane lands of Louisiana; (8) the oil fields of Mexico; (9) the cotton belt of the United States; (10) a ranch in the Great Plains; (11) an irrigated "oasis" in our Western plateaus; (12) a banana plantation in Central America.

Some things to explain. 1. On Figure 5 (p. 4) find the three most densely populated parts of South America. Explain why so many people live in those sections.

2. Explain why northern Argentina has more people than southern Argentina.

3. Explain why southern Brazil has more people than northern Brazil.

Sentences to complete. 1. The South American countries trade mostly with the temperate countries of North America and Europe because _____.

2. The exports of South America are mostly raw materials and foodstuffs because _____.

3. The imports are largely manufactured goods because _____.

4. The countries of South America do not carry on much manufacturing because _____.

5. South America is a "continent of opportunity" because _____.

A South American exhibit. Get samples of as many different South American products as you can and mount them in the proper places on a large outline map of the continent.

Cut pictures of South American scenes from old magazines and paste the most interesting ones on posters, labeling them neatly.

Invite your parents or the pupils of another class to see the exhibit. Perhaps you can plan some short talks to make the showing of the posters more interesting.

Figure 48. The Castle of Chillon on Lake Geneva.

NATIONS BEYOND THE SEAS

THE OLD WORLD

I. THE EASTERN HEMISPHERE AND ITS PEOPLE

1. Foreword

The New World and the Old World. During your study of North America and South America you learned that the white men who explored and settled the two continents of the Western Hemisphere came from Europe. When the people of Europe learned of the new-found lands on the western side of the Atlantic Ocean, they began to call the Americas the New World. Later, the lands of the Eastern Hemisphere which had been known so much longer came to be called the Old World. These names have never been given up, and we still call the lands of the Western Hemisphere the New World, and those of the Eastern Hemisphere the Old World. Australia was discovered and settled much later than the Americas, but since it is located in the Eastern Hemisphere we include it among the lands of the Old World.

The older nations. We speak of the people of a country as the *nation*. Long before the discovery of America the people of some of the older nations in Europe had written books and plays, made wonderful buildings, monuments, and statues, and painted beautiful pictures. When you visit the Mediterranean countries, you will see the remains of temples and palaces which the Greeks and Romans built more than a thousand years before Columbus was born,— buildings so beautiful that architects copy their designs to this very day. All over western Europe you will see churches and castles which were built in the days when people thought that Europe, Asia, and Africa were all the lands there were in the world. *See Figures 49 and 50.*

You may have seen copies of some of the statues made long ago by the Greek sculptors, or of some of the paintings of the "old masters," as the earliest of the famous European painters were called. Every art student of today studies the work of the early Greek sculptors and the old masters of painting, and every student of literature reads the plays and poetry written by the Greeks and Romans of long ago.

The people of some of the older nations had also made many wonderful discoveries and invented many useful things long before they knew anything about the Americas. For example, the ship's compass, which makes it possible for sailors to know their directions at sea, was invented by the Chinese over seven hundred years ago. In Europe one of the greatest inventions made before the discovery of America was the printing press. Can you explain why this was a very important invention?

New nations from old nations. As people from Europe settled in the New World, the Americas became new homelands for people of the older nations. You already know that most of the white people of South America and southern North America are of Spanish or Portuguese descent, while the people of Canada are mostly of British or French descent.

Figure 49. The Arch of Titus and the Colosseum at Rome, in Italy. The arch was built by an emperor of the Romans in the year 81. How long ago was that? Beyond the arch you can see the ruins of the huge amphitheater called the Colosseum, which was used by the Romans as a place for holding outdoor entertainments.

Do you know why we speak English in our country? It is because the largest numbers of people in the United States are descended from people who once lived in Great Britain and Ireland, the European countries where the English language is spoken. But many of the other nations of Europe are also represented in our population. Perhaps you yourself are descended from people who were born in one of the countries on the continent of Europe, or you may have neighbors and friends whose families came to the United States from one of those countries years ago.

In our own country and other countries of the Americas there are some people who have come from Asia and Africa, or whose families came from there. They too help to make up the new nations of the Western Hemisphere, but they are much fewer in number than the people of European descent.

Our trade with the Old World. Ever since the earliest days of settlement, the people of the New World have traded with the people of Europe. Today ships carry more goods back and forth between ports of western Europe and ports on the Atlantic coast of the United States than between any other parts of the world. Turn to the map on pages 386–387 and prove that this is true. Notice also how much trade there is between the countries of western Europe and the countries of South America which border the Atlantic Ocean.

Our own country also carries on much trade across the Pacific Ocean with the people of Japan, China, and the Philippine Islands, and our trade with the people of the East Indies, Africa, Australia, and New Zealand is growing more important every year. Turn to the map on pages 386–387 again and find all the lands named in this paragraph.

The lands of the Eastern Hemisphere. The lands of the Eastern Hemisphere, or the Old World, are the continents of Europe, Asia, Africa, and Australia, with all the neighboring islands. Any map of the world will show you that Europe and Asia form one great stretch of land. When we wish to speak of

Figure 50. One of the old châteaus, or castles, in France. This beautiful château was built as a home for a French nobleman in the year 1390. How many years before Columbus discovered America was that? How much older is the château than the oldest building now standing in the town, city, or state in which you live?

this great land mass as a whole, we call it Eurasia. Europe forms the western part of it, and Asia the central and eastern parts.

As you study about the lands of the Old World, keep these questions in mind:

1. In what parts of the Old World do the people live and work much as we do in our country, and why?
2. In what parts of the Old World do the people live and work very differently from the way we do, and why?
3. In what parts of the Old World do the people live and work somewhat as those in the tropical parts of the Americas do, and why?

Sentences to complete. Give the correct words to complete the following sentences. You may use the map on pages 382–383 if you need to.

1. The continents of the New World are _____ and _____ _____.
2. The continents of the Old World are _____, _____, _____, and _____.
3. Eurasia is made up of the continents of _____ and _____.
4. Africa is separated from Europe by the _____ Sea.
5. The islands southeast of Australia form the country of _____.

Some things to do. 1. If you were born in some country of the Old World, locate that country on a wall map or on the map on pages 378–379.

2. If you were born in the United States, ask your father or mother what country of the Old World was the homeland of your family before they came to America. You may find that your father's people came from one country, and your mother's from another. On the map locate the Old World countries which you can claim as family homelands.

Special credit work. 1. Find out at least six other languages besides English which are spoken by people in various countries of Europe. Use a wall map or the map on pages 378–379 to show your classmates the country where each language is spoken.

2. Many interesting stories for boys and girls written by people in the Old World have been *translated*, or turned, into English. Try to find such a story and read it. Tell the story briefly to your classmates, and point out the author's country on the map.

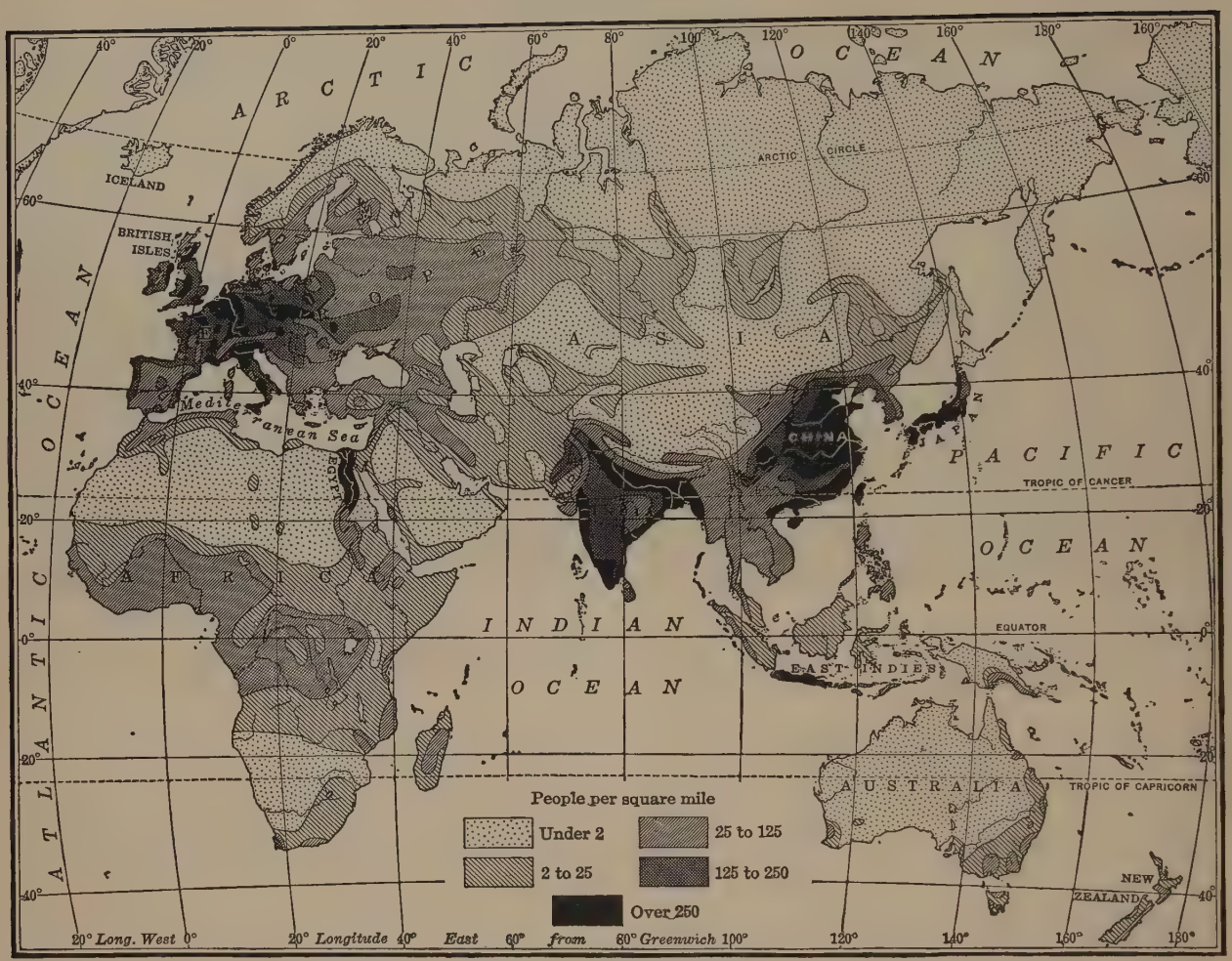


Figure 51. Distribution of people in the Old World.

2. First Glimpses of the Old World

In your study of the Americas you discovered that some parts of the New World are very densely, or thickly, settled, and that other parts are very sparsely, or thinly, settled. You will find that the same thing is true in the Old World. Some parts of the Old World are more crowded with people than any part of the New World is, and other parts are almost without people. As you study this section, watch for reasons for these differences in the distribution of population.

Lands crowded with people. On Figure 51 find the three large areas in the Old World which are most crowded with people. In what continent are two of the areas? In what continent is the third?

One of the densely populated areas which you have discovered is in eastern Asia. Over five hundred million people live crowded together in eastern China and Japan. The second densely populated area is India. Over three hundred million people live there. The third area is the western half of Europe, where three hundred and fifty million people live crowded together.

Reasons for crowding. Can you think of any reasons why so many people live crowded together in the areas that you have located on the population map? Figure 52 and the map on pages 54–55 will help you to discover why these parts of the Old World are so densely populated.

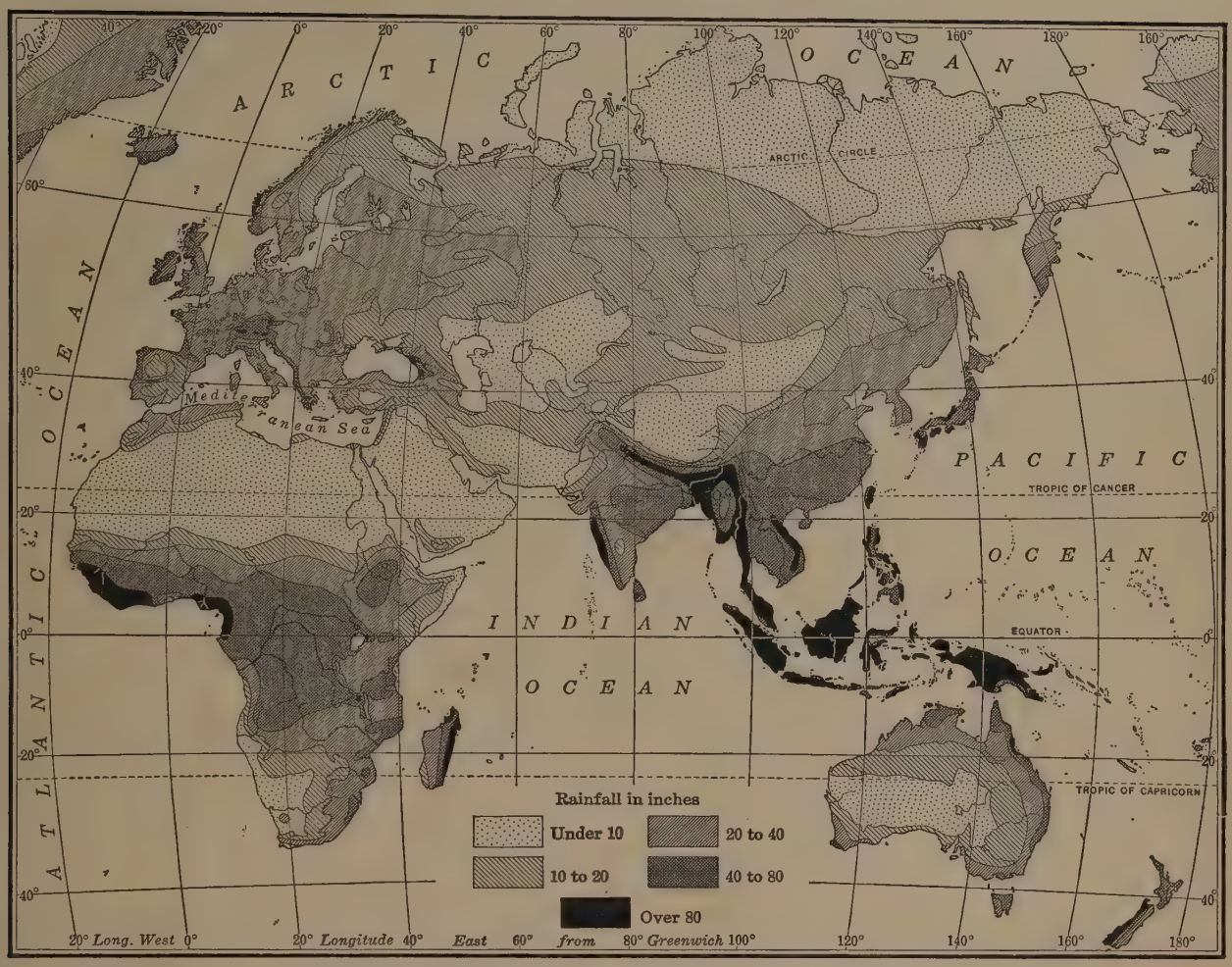


Figure 52. Distribution of rainfall in the Old World.

Turn first to the regional map of the Old World on pages 54–55 and locate the three very thickly populated areas of Eurasia that you found on Figure 51. Are they mostly mountainous lands, or have they large stretches of plains?

Now study Figure 52. Remember that in order to be well suited to most kinds of farming a region should have at least 20 inches of rain each year. What does Figure 52 show about the rainfall in the three most densely populated parts of Eurasia?

You will remember that most of the people of the New World live in well-watered lowlands in the north and south temperate zones, where the temperature changes from season to season and the surface and climate are well suited to farming. Use the map on pages 54–55 and Figures 51 and 52 to prove that

1. Except for the Dekkan Plateau of India, the most thickly populated parts of the Old World are largely in the north temperate zone.

2. The three large areas of densest population in Eurasia are not in the coldest or highest parts of the Old World.

3. Within each of these three areas of Eurasia there are large stretches of lowland plains.

4. Most parts of the crowded areas of Eurasia have between 20 and 80 inches of rain each year.

Turn over to page 56.

MAP STUDIES

1. Plan a flight in an airplane in seven great "hops" as follows:

(1) London (*C2*) to Moscow (*F2*)
(2) Moscow to Bombay (*H4*)
(3) Bombay to Tokyo (*N3*)
(4) Tokyo to Sydney (*O8*)
(5) Sydney to Cape Town (*E8*)
(6) Cape Town to Cairo (*F3*)
(7) Cairo to Paris (*D2*)

2. Over what thickly populated region shall you be flying on your first hop? Name a large city between London and Moscow where you might stop on this flight.

3. What regions shall you fly over on your second hop? Why have they fewer people than the plains that you saw on your first hop? Where shall you cross the natural boundary between Europe and Asia?

4. Over what two very crowded parts of Asia shall you fly on your third hop? At what large cities might you stop between Bombay and Tokyo?

5. What body of water shall you fly over on your fourth hop? What zone shall you cross during your flight over the Pacific Ocean?

6. What body of water shall you fly over on your fifth hop? In what zone shall you be during your flight from Sydney to Cape Town? At what other city in Australia might you stop on that flight?

7. What regions shall you fly over on your sixth hop, from Cape Town to Cairo? What zone shall you cross on that flight? What desert shall you see as you cross the tropic of Cancer? What river valley shall you be following as you approach Cairo? What other large city could you visit near Cairo?

8. What sea and what mountains shall you fly over on your last hop, from Cairo to Paris?

Map Plate, Patented July 5, 1921 · Method of Making Maps, Patented July 5, 1921

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Photograph by Pictorial Clubs, Inc.

Figure 53. A view in the Plateau of Arabia, where so little rain falls that it is hard for people to make a living. A scanty growth of grass and widely scattered pools of water make it possible for small groups of wandering Arabs to live in this dry region by keeping flocks of sheep and goats, and a few camels and horses.

Lands with very few people. Turn to Figure 51 again and find the three largest sections of the Old World where very few people live. You will discover that one of them is in Asia, another in northern Africa, and the third in Australia.

In your study of the Americas you learned that the most thinly populated parts of the New World are chiefly the parts which are the highest, driest, or coldest. Compare the maps on pages 52, 53, and 54–55 and see if you can find similar reasons for the most thinly populated parts of the Old World.

First study the population map again. What one of the thinly populated sections is partly north of the arctic circle? What reason can you give for the few people there?

Turn next to the regional map on pages 54–55. What kind of surface do you find in the great sections of very sparse population? Taken as a whole, are those sections made up chiefly of lowland plains, or more largely of mountains and plateaus?

Now turn to the rainfall map on page 53. How does it help to explain the locations of the very thinly settled sections?

What you have discovered. You have discovered that, except for part of India, the three largest sections of dense population in the Old World are mostly in the north temperate zone; that within them are large stretches of lowland plains; and that they have over 20 inches of rain each year.

Think over what you have learned about the work of the people in regions of the same kind in the Americas, and then make a list of the kinds of work that you think the people of the thickly populated parts of Eurasia do. Keep your list and check it as you learn more about these Old World lands.

You have also discovered that the great sections of the Old World which have very few people are largely high lands or dry lands, and that part of the very thinly settled section of Asia is a very cold land. The regions that have less than 10 inches of rain each year are true deserts. Why is it hard for people to make a living in very dry lands?

Figure 54. A picture taken in the harbor of Canton, one of the great seaports of China. The eastern part of China is so densely populated that many people live in small boats in the river mouths and harbors along the coast. Some of them make their living by carrying goods from place to place in their house boats.

What have you learned about the life and work of people in the high, rugged mountains and in the deserts of the New World? Make a list of the kinds of work that you think the people do in regions of the same kind in the Old World. Keep this list with your first one, and check it as you learn more about these regions.

Figures 53 and 54 show some interesting contrasts between Arabia, which is one of the very thinly populated parts of Asia, and China, which is one of the most crowded parts. Study both pictures carefully.

Flying over the Old World. Suppose you had an airplane of your own and could fly wherever you pleased. In the column at the left of the map on pages 54–55 you will find suggestions for a trip by airplane in the Old World. As you work out the map studies, try to imagine that you are really flying over the Old World lands.

Making choices. Prove that you are getting acquainted with the Old World by choosing the right ending for each sentence below.

1. Most of Eurasia is in the
north temperate zone. south temperate zone. torrid zone.

2. The greater part of Africa is in the
north temperate zone. south temperate zone. torrid zone.

3. The continent of the Old World which is wholly in the Southern Hemisphere is
Asia. Australia. Africa.

4. The most densely populated sections of the Old World are largely regions of
high mountains. plateaus. lowland plains.

5. The yearly rainfall in the three large areas of dense population in Eurasia is
enough for farming. too little for farming. too much for farming.

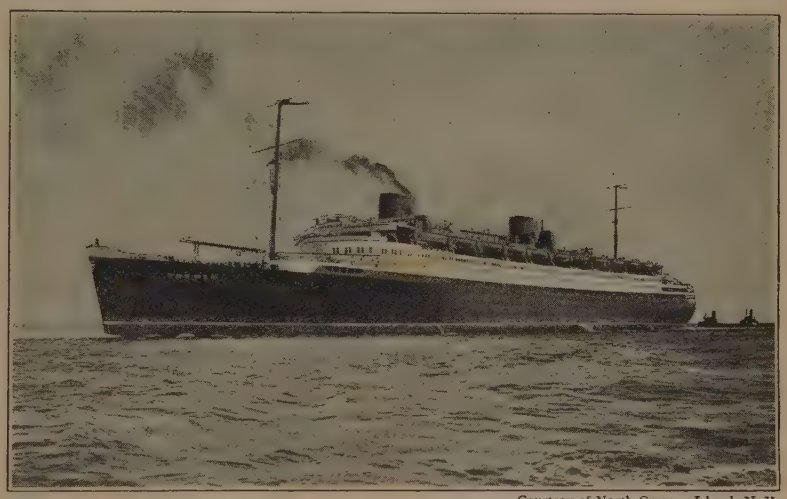
Water less than 500 ft. deep
Land below sea level
Floating ice
Tundra
Grasslands and cultivated areas
Temperate forests
Semideserts, deserts, and barren mountain slopes
Oases
EUROPE
Scale of miles
0 100 200 300 400 500

II. OUR NEAREST NEIGHBORS IN THE OLD WORLD

Foreword. The part of the Old World that the people of our country visit most often is Europe. One reason is that Europe is nearer to us than any other part of the Old World. Another is that most of the people of the United States are descended from European people. How many countries of Europe can you name without looking at a map?

Turn to the map of the world on pages 378–379 and name the European countries that border the Atlantic Ocean. These are our nearest neighbors in Europe. Do you know how we keep in touch with them?

Travel across the ocean. The fastest steamships cross the Atlantic Ocean from New York to French or British ports in about five days. A much larger number of boats make the crossing in from seven to ten days. An airplane has flown from New York to Paris in less than a day and a half, and a dirigible carrying passengers has crossed the Atlantic in less than three days. *See Figures 55 and 58.*



Courtesy of North German Lloyd, N. Y.

Figure 55. One of the great ocean liners, or passenger ships, which cross the Atlantic Ocean from ports of western Europe to New York City in less than five days. This ship carries 2200 passengers.

Hundreds of thousands of people travel by boat each year between the countries on the opposite sides of the north Atlantic Ocean. Millions of tons of freight are carried by ships between those countries, and millions of letters pass back and forth. Ideas and news also travel back and forth easily, and they help the people of North America and Europe to know each other better.

Sending messages. Telegraph cables that rest on the sea bottom are used to send messages quickly from one side of the ocean to the other. Radio stations in the United States and others in western Europe keep in touch with one another, and by using the radio it is even possible for people in North America and people in Europe to telephone to one another.

Some comparisons. In the lists on pages 378–379 find the area of Europe and the area of the United States. Comparing their size will show you that Europe is somewhat larger than the United States. But the United States is a single country, while Europe is divided into twenty-nine different countries. What is true, then, of the size of the European countries compared with our country?

Turn to pages 378–379 again and trace the parallel of 40° north latitude across the map of the world. Notice that this parallel divides the United States about in halves. What part of Europe does it cross? Now trace the parallel of 60° north latitude and the arctic circle across the map. Do these lines cross the United States? What part of Europe do they cross? What can you say now about the locations of Europe and the United States with reference to the equator? with reference to the north pole?

Turn over to page 62.

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Figure 56. Distribution of rainfall in Europe.

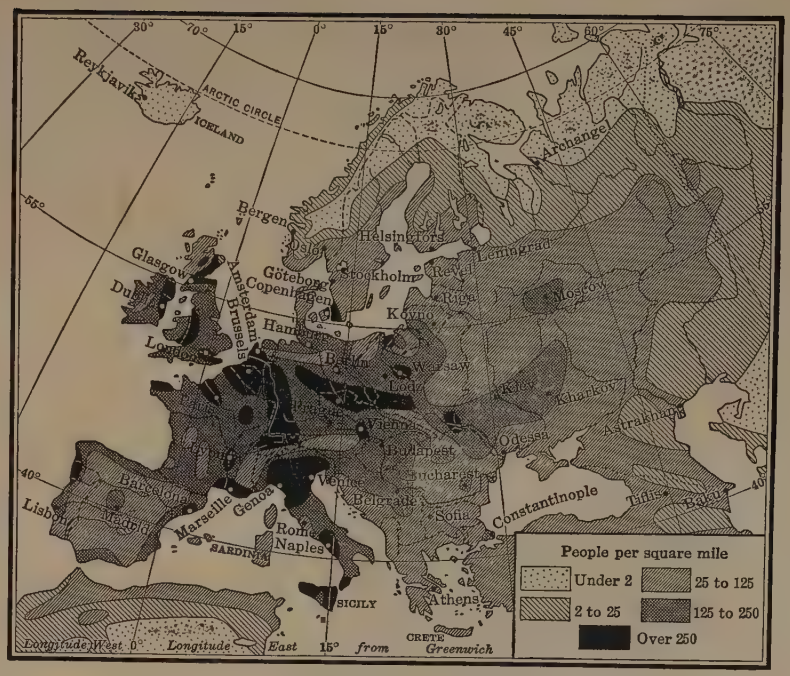

Figure 57. Distribution of people in Europe.

MAP STUDIES

1. In what part of Europe do you find young, rugged mountains? 2. Name the two mountain regions which have the highest summits. 3. How does Mont Blanc (*G6*) in the Alps compare in height with Mount Elbrus (*O7*) in the Caucasus? 4. What mountains in the Americas are of the same kind as those in southern Europe? 5. In what ways do you think the people of the young, rugged mountains in Europe probably make their living?

6. Find the Central Plains, the Paris Basin, the Plain of the Po, and the Plain of Hungary. 7. Compare this map with Figure 56 and give two reasons why these plains are well suited to farming.

8. Find the Northwest Highlands and the Central Highlands. 9. What large region of old, worn-down mountains forms part of the Northwest Highlands? 10. In the Central Highlands of Europe the landscape is much like that in parts of the Appalachian Highlands of North America. Can you explain why?

11. Notice how irregular the western coast line of the Scandinavian Peninsula is. This coast is broken by long, narrow fiords which will remind you of southeastern Alaska and southern Chile.

12. What sea separates the Scandinavian Peninsula from the British Isles? 13. What sea extends far into the Central Plains of Europe? 14. What large sea borders Europe on the south? 15. What do you find on Figure 56 to show that northwestern Europe lies in the path of the rain-giving westerly winds?

16. Use Figure 57 to compare the density of population in central and southern Europe with the density in northern Europe. What reasons can you give for the difference? 17. Compare the density of population in the western half of Europe with that in the eastern half, and give reasons for the difference.

Photograph by U. S. Signal Corps from Wide World Photos

Figure 58. The *Graf Zeppelin*. This dirigible has made several flights across the Atlantic Ocean, carrying passengers. In August, 1929, it made a trip around the world in about 21 days.

Since Europe lies so much farther north than the United States, you might expect its climate to be much colder. This, however, is not true, except in the northern sections of Europe which are far inland. Do you know why? If you cannot tell the reason now, be on the lookout for it as you learn more about the European countries.

The natural regions of Europe. When you were studying the lands of the Western Hemisphere, you found that the way people live and work depends largely on the kind of region in which they make their home. In order to understand how the people live in different parts of Europe, you need to get acquainted with the natural regions of the continent. To do this, work out the map studies on page 61.

Lands held by European nations. You will remember that the United States has several possessions in different parts of the world, and that we found parts of the British Empire in North America, South America, and the West Indies. We also found French and Dutch possessions in the Western Hemisphere. Do you remember where they are?

We shall find that the British, French, Belgians, Dutch, Italians, and a few other nations of Europe hold lands in distant parts of the Eastern Hemisphere. Many, but not all, of these possessions are called colonies.

Homelands and possessions. The people of the homelands in Europe and those of the distant possessions are keenly interested in each other. One reason for this is that many people from the home countries go out to the possessions to make new homes, or to work for a time as representatives of business companies or as government officials. Naturally enough, their relatives in Europe are interested in the lands to which they have gone, and they, in turn, seldom lose interest in the home country. Another reason is that trade between the home countries and many of the possessions is very valuable, and keeps them in close touch with one another.

The distant possessions mean so much to the people of the homelands in Europe that we shall study the European countries and their possessions together, just as we studied the United States and its possessions. We shall begin our study with the British Empire, which is made up of the British Isles, in Europe, and all the British lands in distant parts of the world.

Something to do. On an outline map of the world color the British Isles in red. Then color the British possessions in the Western Hemisphere in pink. If you cannot remember all of them, the map on pages 90–91 will help you. Keep your map so that you may color the British possessions in the Eastern Hemisphere as you study them.

Perhaps a group of pupils in the class can make a large wall map to show the lands of the British Empire.

THE BRITISH EMPIRE

I. A COMMONWEALTH OF NATIONS

Foreword. In the early days of exploration, before anyone knew how many continents there were on the earth, the British sailors were among the most daring men who went to sea. They visited many distant parts of the world, and when they returned to their homes in the British Isles they told of the far-away lands and the strange people they had seen.

Later the British sent out colonists to settle in some of these distant lands, and formed business companies to carry on trade with others. Through settlement and trade they gradually gained possession of many different parts of the earth, until today they control more land than any other nation. Their vast empire includes lands in every continent, and its area of more than thirteen million square miles is nearly one fourth of the entire land area of the earth.

Contrasts within the empire. The various parts of the British Empire differ greatly from one another. In some parts the winters are long and cold, and in others the weather is always warm. Other parts are desert regions, and still others are lands where the rainfall is so heavy that there is danger from floods.

Map work. Before you read further about the British Empire, turn to page 91 and work out the map studies there.

The people of the empire. In the lands belonging to the British Empire there are about four hundred and fifty million people, which is nearly one fourth of all the people on the earth. Of this great number, sixty-five million are white people and three hundred and eighty-five million are people of the darker-skinned races. Some of the groups of people within the empire are among the most advanced nations of the world, while others are among the most backward nations.

The people who live in the British Isles are the English-speaking people of Europe, and most of the white people in all parts of the British Empire use the English language. In many of the colonies there are native people who use their own language, but more and more of them are learning to speak English because they need it in order to trade with the white people.

World-wide interests of the British people. All the large firms carrying on business in distant parts of the British Empire have offices in one or another of the great cities of the British Isles, and many of the business firms of the home country have branch offices in the dominions and colonies. Thus the British people have business interests in all parts of the world.

On any day of the year, at any one of the large seaports of the British Isles, you might see ships arriving from other parts of the empire or sailing off to those distant lands. If you should visit the wharves frequently, you would discover that people and goods are always traveling back and forth between the home country and the colonial lands.

In almost every British family there is someone who has gone to live in one of the distant parts of the empire, or someone who has joined the navy or is an officer or a seaman on some passenger ship or freighter which crosses and recrosses the oceans.

The divisions of the empire. When you were studying North America, you learned that Canada and Newfoundland are dominions of the British Empire. How many other dominions did you discover in studying the

map on pages 90–91? The dominions are almost like independent countries, for the people govern themselves. Each of the colonies has a governor sent out from the home country, but the people themselves also have a share in the government.

Besides the dominions and colonies, there are parts of the empire called protectorates and dependencies. They are lands where the British protect the native people and help them with their government.

A commonwealth of nations. The British people often speak of their empire as the British Commonwealth of Nations. The word *commonwealth* comes from the old English words *common weal*, which mean "common good," or "for the good of all."

Although the British Empire is made up of widely scattered lands and many different groups of people, all the members of this great family of nations help each other through friendship and trade. Helping each other works for the good of all, and thus the British Empire is a real commonwealth of nations.

Where are these ships going? A shipowner in the British Isles is sending out five ships to distant parts of the empire. The place where each ship is going is described below. Write the names of the places in a list, in the order in which they are described. When you have finished, check your list by the map on pages 90–91 to make sure it is correct.

1. To a large British dominion in North America. Canada
2. To the largest of the British lands in Asia. India
3. To a British dominion in Africa. Guina
4. To a British dominion which occupies a whole continent. America
5. To the dominion farthest southeast from the British Isles.

II. THE BRITISH ISLES

Foreword. The British Isles are made up of the two large islands known as Great Britain and Ireland, and the many small islands close by. Great Britain includes England, Scotland, and Wales. Ireland has two political divisions: Northern Ireland and the Irish Free State. Find these five divisions of the British Isles on the map on pages 70–71.

Great Britain and Northern Ireland are closely united in government, but the Irish Free State has an independent government, somewhat like that of the self-governing dominions.

The British Isles make up less than 1 per cent of all the lands of the empire, and yet they have more than 10 per cent of all the people, and they are one of the most densely populated parts of Europe. Do you know why it is that so many people can make a living in these islands? Watch for reasons as you study this chapter.

1. The Homeland of the British

When you were studying the United States, you learned that the people of New England began very early to use the sea for fishing and trading, and that later on trading helped them to develop manufacturing. The story of the British people is somewhat like that of the New Englanders. For hundreds of years they have been using the sea for fishing and trading, and today they carry on more dollars' worth of foreign commerce, or trade with other countries, than any other nation in the world. Our own country ranks second in foreign commerce.

During the last one hundred and fifty years the British people have also become a great manufacturing nation, and manufactured goods are by far the most valuable products that they sell to the people of other countries.

As you study this section, find reasons why the British have become leaders among the commercial, or trading, nations of the world, and also among the industrial, or manufacturing, nations.

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Figure 59. A view among the beautiful Lakes of Killarney in southwestern Ireland. The castle shown in the picture was built over 300 years ago. Many of the upland regions of the British Isles are as hilly and mountainous as this. Do you think they make especially good farm lands? Give a reason for your answer.

Map study. Begin your study of the British Isles by using the map on pages 90–91 to answer the following questions:

1. Is the coast line of the British Isles smooth and regular or crooked and irregular? 2. What does this suggest about the number of good harbors for ships? 3. What bodies of water surround the British Isles? 4. What narrow bodies of water separate Great Britain from France?

5. What range of old, worn-down mountains do you find in England? 6. In what part of England are these mountains? 7. How should you describe the rest of England? 8. Is Wales chiefly an upland or a lowland country?

9. In what part of Scotland do you expect to find the most people? Why? 10. Look at Figure 57 on page 61 and see if your answer to the first part of question 9 was correct. 11. How does the central part of Ireland differ from the northern and southern parts? 12. In what country is the central plain of Ireland?

The higher lands of the British Isles. You have discovered from the map that much of the land in the British Isles is hilly or mountainous. The mountains are old and worn down, and the uplands are lands with rounded hills and gently sloping valleys. In northern England and in Scotland and Ireland there are lake districts much like our own beautiful lake districts in New England and in the Adirondack Mountains. *See Figure 59.*

The continental glacier and its work. Do you remember about the great ice sheets, or continental glaciers, which long ago covered the northern part of North America? At about the same time that these ice sheets formed in North America a great ice sheet formed in the Scandinavian Peninsula of Europe and spread over the northern part of that continent. It brought about changes in Europe similar to those caused by the ice sheets in North America. Figure 60 shows how much of Europe was covered by the continental ice sheet.

As the great mass of glacier ice moved slowly over the highlands of Scotland and the Pennine Range of England, it wore down the higher parts and rounded the mountain peaks. When the ice finally melted away, it left loose rock material known as *glacial drift* spread over the land which it had covered. Fortunately, the glacial drift left in the British Isles is not so coarse and bowldery as that in New England, and therefore it is not so great a handicap to farming.

Figure 60. A map showing how much of Europe was covered by the continental ice sheet of long ago. Notice that as the ice spread southward from the Scandinavian Peninsula it covered all parts of the British Isles except the southernmost part of England.

The lowlands of the British Isles. In studying the map you discovered that there are three important lowland regions in the British Isles. The largest one is in England, and within it are the best farm lands of that country, and also many of the largest industrial, or manufacturing, centers. In the farming sections you will see grainfields and pastures bordered by beautiful hawthorn hedges instead of by wooden fences or stone walls. *See Figure 61.*

The lowland of Scotland forms a narrow belt between the Scottish Highlands on the north and the uplands of southern Scotland on the south. It is a beautiful region of green fields which are used for pastures and mixed farming, and scattered through it are many little villages and a few large cities. It is in this lowland region that most of the people of Scotland live. Explain why.

The lowland of Ireland extends from coast to coast across the central part of the island. Much of the land in this region is so low that it is swampy, but it makes good pasture land.

In all parts of Ireland the summers are cool, the winters mild, and the rainfall abundant. For this reason the grass stays green throughout most of the year. Ireland is often called the "Emerald Isle." Can you explain why?

Mineral wealth. Turn to the map on pages 70–71 and find the places where coal is mined in England, Scotland, and Wales. Notice that there are coal mines in the lowlands as well as in the uplands. The fact that there is much coal in Great Britain will help you to understand why manufacturing is so important there. Study the map again and name a metal ore that is mined in several different parts of England. What kind of manufacturing, then, do you expect to find in some of the English industrial centers?

The "drowned" coast line. You discovered in studying the map that the coast line of the British Isles is very irregular. That is because long, long ago the land sank and the sea water came into the lower ends of the river valleys. For this reason we say that the river mouths have been "drowned." We call a drowned river mouth an *estuary.*

The estuaries provide the British Isles with many large, deep harbors for ships. That is one reason why the British have always been seafaring people; that is, people who make much use of the sea. *See Figure 62.*

The shallow bordering seas. Turn to the map on page 60 and find the brown line in the water around the British Isles. Notice that it is marked *100 fathoms.* Along that line the water is 100 fathoms, or 600 feet, deep.

During your study of North America you learned that the 100-fathom line marks the outer edge of the continental shelf, or the part of the land which lies under water much shallower than the deep oceans. Turn to the map on page 60 again, and you will see that the British Isles are surrounded by shallow seas.

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Figure 61. Plowing in the southern part of the plain of England. Contrast the surface of the land here with that shown in Figure 59. Where in Scotland and Ireland may you expect to find land as level as this?

Courtesy of Grace R. Stevens

Figure 62. Two villages on the southwestern coast of England. One village is on the top of a sea cliff, and the other is at the foot. How do you think some of the people of the lower village make their living?

Famous fishing grounds. Do you remember the famous fishing grounds called "banks" which are found on the continental shelf bordering northeastern North America? The North Sea and the other shallow seas bordering northwestern Europe are also rich fishing grounds, because they too are feeding places for millions of fish. That is why fishing has always been an important kind of work along the shores of the British Isles. *See Figure 63.*

A climate problem. You have already discovered that the British Isles are in the same latitude as Labrador, and you know that Labrador is so cold that very few people live there. The map on page 388 will help you to understand why northwestern Europe is warmer than the eastern part of North America in the same latitude. What ocean current moves northeastward across the Atlantic Ocean toward northwestern Europe? Is it a cold current or a warm current?

How oceans affect climate. Wherever you travel you will find that ocean waters have much to do with the climates of the bordering lands. In the first place, they make coast lands cooler in summer and warmer in winter than interior lands in the same latitude.

The next point for you to remember is that there are warm currents and cold currents in different parts of the oceans. The warm currents make the air just above them warm, while the cold currents make the overlying air cold. When air warmed by an ocean current is blown over a land surface, the temperature of the air over that land becomes warmer. What happens when air cooled by an ocean current is blown over a land surface?

The oceans also have much to do with the rainfall of the bordering lands. Winds that blow from the oceans bring rain-bearing clouds to the lands, and therefore all coast lands where winds blow steadily or frequently from the sea have abundant rainfall throughout the year.

Temperatures in the British Isles. The reason the British Isles are so much warmer than Labrador is that they lie in the path of the westerly winds of the Northern Hemisphere. These winds, blowing across the north Atlantic Ocean, carry air warmed by the Gulf Stream and the Gulf Stream Drift to the British Isles and other parts of northwestern Europe. Thus this part of Europe has a much warmer climate than the part of

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Figure 63. Fishing boats in the harbor of one of the fishing ports of England. Many of the fishermen use sailing boats and many go out in steam trawlers.

North America on the opposite side of the Atlantic Ocean in the same latitude.

The British Isles are seldom very cold in winter or very hot in summer. That is because the islands are not large, and therefore all parts of them are affected by the temperatures of the surrounding waters.

Since in the winter the waters surrounding the islands do not cool off so fast as the land, the air that blows inland from the sea keeps the winter weather from being very cold. For this reason the temperature seldom falls to the freezing point (32° Fahrenheit) in the lowlands of these islands.

During the summer the air over the land becomes warm, for the summer days are long in the latitude of the British Isles. But the surrounding waters do not warm up so fast as the land, and the cool breezes which blow inland from the sea keep the summer temperatures from being uncomfortable.

Rainfall in the British Isles. The westerly winds bring large quantities of moisture to the British Isles, giving them a rainy climate. The western sides of the islands and the mountainous parts have from 70 to 80 inches of rain a year, and the lowlands have from 25 to 40 inches in most sections. This, as you know, is plenty of rain for agriculture. The driest section is in the lowland northeast of London. Can you explain why?

Some things to explain. Explain what is meant by each of the following words and phrases:

continental glacier	seafaring people
estuary	foreign commerce
fathom	commercial nation
continental shelf	industrial city

Giving reasons. Complete each sentence below by giving reasons for the fact which it states:

1. Many parts of the British Isles are not well suited to farming because _____.
2. There are no sharp peaks in the mountains of Great Britain because _____.
3. The British Isles have many good harbors because _____.
4. The British Isles have a mild, rainy climate because _____.
5. They are much warmer than Labrador because _____.

Something to prove. If you can answer the following questions correctly, you will prove that you already know some of the reasons why the British people are one of the greatest commercial and industrial nations of the world.

1. Why is it easy for people who live on islands to carry on trade with people in other parts of the world?
2. How does a "drowned" coast line help people to make use of the sea?
3. How does an abundance of coal help a nation to carry on manufacturing?
4. For what important kind of manufacturing is iron ore the principal raw material?
5. Why is a densely populated country better prepared to carry on manufacturing than a sparsely populated country?
6. How does foreign commerce help a country to increase its manufacturing?

Special credit work. Find out how much rain falls each year where you live, and tell how it compares with the rainfall in the British Isles.

Courtesy of Grace R. Stevens

Figure 64. Buckingham Palace, the home of the British king. The British recognize the king as the head of the government, but the real power lies in the hands of the prime minister and other officers of the people.

By Ewing Galloway, N. Y.

Figure 65. The Houses of Parliament, seen from across the Thames. The British Parliament is somewhat like our Congress, and is made up of members from England, Scotland, Wales, and Northern Ireland.

2. The Capital of the British Empire

Every visitor to Great Britain wishes to see London, just as every visitor to our country wishes to see New York City. New York, you will remember, is the largest city in the world. London is the next largest. Within the city limits live over four and a half million people, and crowded closely around it live three and a quarter million more.

Find London on the map on pages 70–71 (*G5*). In what part of England is it located? On what river? Can you suggest any reasons why a great city should have grown up at that place?

A great center of government. London is the capital of the United Kingdom of Great Britain and Northern Ireland. Figure 64 shows the palace where the king lives, and Figure 65 shows the great building where the British Parliament meets to carry on the government of the kingdom.

London is the capital of the British Empire also. In this great city are offices where matters concerning the self-governing dominions are cared for, and others where men in charge of certain affairs of the colonies and dependencies do their work.

A busy, crowded city. The traffic in London reminds us of New York and the other large cities of our country. The sidewalks are crowded with people, and the streets are filled with taxicabs, busses, and private automobiles. Beneath the ground there is a network of subways for electric trains. Thousands of people use the subways to travel back and forth between their homes and their places of work.

The shops and stores in London are much like those in our own large cities. The business buildings are large, and many are ten or twelve stories high, but there are no huge skyscrapers such as we have in the United States. *See Figure 66.*

Old London. Figure 67 shows that London spreads out on both sides of the river Thames. In the midst of the great city of today is Old London, on the north bank of the river near London Bridge. (See 11 on Figure 67.) Here the first settlement was made, more than two thousand years ago. The map on pages 70–71 will help you to understand why a town grew up at this place. Notice that the river Thames flows from west to east across southern England.

Map Plate, Patented July 5, 1921 • Method of Making Maps, Patented July 5, 1921

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By Ewing Galloway, N. Y.

Figure 66. A street in one of the busiest shopping districts of London. Find a motor bus and a traffic policeman in the foreground of the picture.

For a long distance upstream from its mouth the Thames is wide and deep, and is bordered by low, swampy land. The place farthest east where the river was narrow enough and the ground dry enough for a bridge to be built in the early days was near where London Bridge stands today. The first bridge was probably narrow and made of wood, but it was very important; for it was here that roads from the southern parts of England met to cross the Thames, and then spread out to north and west.

Because the bridge was the meeting point for the roads of southern England, a settlement grew up at its northern end; and as time went on, this "bridge town" became the most important trading center of Great Britain. As you read further, watch for reasons why it has grown to be one of the world's greatest cities.

Today Old London is the heart of the business section of the great city. Like Lower Manhattan in New York, it is crowded with workers during the day; but at night, after the banks and business offices have closed, most of the buildings are empty and the streets are quiet.

Some famous buildings. In Old London, surrounded by business buildings, is St. Paul's Cathedral. This great church has a beautiful dome which towers above the surrounding roofs. The best shops, theaters, and hotels, and the famous museums and art galleries are in the part of the city west of old London. Here too are the Houses of Parliament and Westminster Abbey, a beautiful old church in which there are statues and busts of people whom the British admire and respect.

Parks and gardens. As London has grown and spread over the lowlands on both sides of the Thames, the people have saved many open spaces for public parks and gardens. Thus there are many pleasant places where the people of this great, crowded city may enjoy themselves out of doors. Find some of the parks on Figure 67.

A famous observatory. We shall surely wish to visit the famous observatory in the part of London known as Greenwich. The observatory is a domed building with a big telescope for studying the stars. It is well known the world over because it marks the place of the prime meridian of longitude, or the meridian of 0°. Find Greenwich on the map on pages 70–71 (*H5*) and on Figure 67.

You will remember that the meridians are the imaginary north-south lines which pass around the earth through the poles. They are numbered by degrees east and west from Greenwich. Since there are 360 degrees in a circle, the meridian of 180° is just halfway around the earth in either direction, west or east, from Greenwich. Use a globe to prove that this is true.

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Figure 67. A relief map of London and its surroundings. The numbers show the location of the following places of interest: 1, Regent's Park; 2, Kensington Gardens; 3, Hyde Park; 4, Buckingham Palace; 5, British Museum; 6, National Gallery; 7, Trafalgar Square; 8, Westminster Abbey; 9, Houses of Parliament; 10, St. Paul's Cathedral; 11, London Bridge; 12, Tower of London; 13, Victoria Park. Find the airport of London.

Down the Thames. We shall find it interesting to make the trip to Greenwich on a passenger boat which runs down the Thames. Just beyond the limits of Old London we shall pass the Tower of London, a great stone building erected as a fortress hundreds of years ago. Part of it is now a museum where many relics of historical interest are kept. Then we shall come to the Tower Bridge, shown in Figure 68. Study Figure 68 and its legend.

Ocean shipping. The busiest part of London's water front extends along the Thames for several miles below the Tower Bridge. There we shall see many large ocean freighters and passenger ships which have come from distant parts of the British Empire and from other countries of the world. They have brought to London large cargoes of raw materials such as wool and hides, and great quantities of foodstuffs, such as wheat, meat, and fruits. Many of the huge storage warehouses which line the water front are filled with imported products for the British people, and many others with British goods to be shipped away.

Turn to the map on pages 70–71 and study the imports of London. From what distant parts of the British Empire do large quantities of foodstuffs and raw materials come to London?

Now study the exports of London. What kind of goods are they — foodstuffs, raw materials, or manufactures? To what parts of the British Empire do large quantities of the exports go?

The tides at London. Each day in the year there are two periods when the ocean waters rise to a high level, and two periods when they sink to a low level. Because of the tides the waters rise and fall twice a day in all the harbors and river estuaries along the ocean coasts. At London the difference in the level of the water at high tide and low tide in the Thames is about 25 feet, and at low tide the water is not deep enough for the larger ocean ships.

Docks for the large ships. Because of the changes in tide, large ocean ships cannot safely tie up at wharves along the banks of the Thames. If they did, they would sink into the mud on the river bottom at low tide. For this reason many large docks of a special kind have been built along the river downstream from the Tower Bridge.

The docks are giant basins of deep water shut off from the river by big gates. Each one is large enough to hold many ships at a time. The ships move in and out of them at high tide. Then the gates are closed, and they keep the water from flowing out of the docks when the tide falls. In this way the ships are perfectly safe while they are being unloaded and loaded again.

London's growth as a seaport. You have learned why London very early became the most important trading center of Great Britain. Can you think of any reasons why it became a busy seaport also?

You can see from the map that the Thames forms a navigable waterway between London and the sea, and that its mouth is not far distant from the continent of Europe. The British people began very early to trade with their neighbors on the Continent. It was natural, then, that ships should bring their cargoes up the Thames to the town that was already the leading trading center and from which goods could be sent in all directions over the roads.

It was also natural that when railroads were built the leading seaport and trading center of Great Britain should become the greatest railroad center. The railroads helped to increase trade, and so London has continued to grow as a seaport. Today it is not only the leading port of the British Isles but one of the greatest ports of the whole world. Besides all the goods which it receives from distant lands for use by the British people, it imports large quantities of goods for *re-export* to other countries.

A great manufacturing center. On your trip down the Thames you will notice that there are many factories along the crowded water front. As you would expect, London, with its many railroads and its great shipping business, is a great manufacturing center. Give as many reasons as you can to explain why. Remember that manufacturers must have raw materials, power, and workers for their factories, and good means of marketing their products.

Among all the different industries of London the making of clothing and the preparation of foodstuffs are the most important. We found the same thing true in New York City. What reason can you give for it?

A world city. The longer we stay in London, the more we realize that it is not only a great British city but a great world city. Its ships trade in all the great seaports of the earth, and its people carry on business in nearly every country. Its banks are among the wealthiest in the world, taking a leading part in the work connected with the exchange of money between all the commercial nations. Because of this work we call London a great *financial center*.

London is also a great *cultural center*, where people from many lands gather to study art and music, to use the books in its wonderful libraries, and to study the collections in its famous museums.

Surrey Flying Services' Photograph from Orient and Occident

Figure 68. An airplane view of part of London, looking up the Thames. In the upper left corner of the picture is the dome of St. Paul's Cathedral. In the center is the Tower Bridge, and just beyond it, at the right, is the old Tower of London. The lower central portion of the Tower Bridge can be lifted to allow boats to pass through. The large ocean ships, however, dock downstream from the bridge, where the water is deeper.

Something to prove. By answering the following questions prove that you understand why London has always attracted people and trade.

1. Why did London become the most important trading center of Great Britain a long time ago?
2. Why did London make an early start as a seaport?
3. Why has London become the greatest railroad center of Great Britain?
4. How did the building of railroads help to increase the foreign commerce of London?
5. Why has London become a great manufacturing center?
6. Why do so many people from all parts of the world visit London?

Something to explain. Explain what has been done to make it possible for large ocean ships to load and unload at London. Use Figure 67 in making your explanation.

3. Other Seaports of the British Isles

Because the long, irregular coast line of the British Isles provides so many good harbors, British trade is carried on through many different seaports. But although there are many ports, Liverpool is the only one which can be compared with London in importance. London and Liverpool together carry on half of all the trade of the British Isles.

Find Liverpool on the map on pages 70–71 (*F4*). On what sea is it located? What port of Northern Ireland is located on that sea? What port of the Irish Free State? What is the leading port of Scotland? In what part of Scotland is it located? What is the leading port of Wales?

As you study about these and other seaports of the British Isles, try to discover how their trade is connected with the work and needs of the people of Great Britain and Ireland.

By Aerofilms from Ewing Galloway, N. Y.

Figure 69. Part of the water front at Liverpool, as it looks from an airplane. The oblong-shaped basins where ships are loading and unloading are the deep-water docks. All the wharves between the docks are lined with storage warehouses, and on some of them there are railroad tracks. Can you tell why this is so?

English Seaports

Liverpool. If you are on a ship coming into Liverpool from the south, you will see the low hills of Ireland and Wales for some hours before you reach the end of your journey. Trace your route on the map on pages 70–71, and try to imagine that your ship is now moving slowly into the harbor of Liverpool.

There are many other ships coming and going in the harbor. Judging from the map, from what countries do you think some of them have come? What have they brought to Liverpool? What do you think those that are leaving are carrying away?

The harbor and the docks. Liverpool is on the estuary of the Mersey River. Because of the rise and fall of the tides in the harbor, the people of Liverpool have had to build docks that can be closed by gates like those at the port of London. The docks extend along the river for about seven miles, providing space for many ships to load and unload at one time. Like the docks at London, they are bordered by huge warehouses for the storage of all kinds of goods. *See Figure 69.*

The large freighters that come to Liverpool load and unload in the docks, but the great ocean liners land their passengers at a floating wharf which rises and falls with the tide. A narrow bridge, also built to change its position with the changing level of the water, connects the wharf with the land.

A great trading center. Liverpool is the port through which most of the British trade with the United States, Canada, and South America is carried on, and altogether its foreign trade is almost as great as that of London. Here, as at London, the leading

Courtesy of Manchester Ship Canal Company

Figure 70. An airplane view of some of the docks at Manchester. This great manufacturing city is about thirty-five miles inland, but the ship canal has made it a busy port. Besides raw cotton, ships from distant lands bring large quantities of mineral oils and wheat to Manchester. What reasons can you give for this?

imports are raw materials and foodstuffs, and the leading exports are manufactured goods. What do you see in the location of Liverpool which helps to explain why its trade with the Americas is greater than that of London?

Liverpool imports more cotton than any other port in the world. Most of it comes from our Southern States, but large quantities also come from Egypt and smaller quantities from India. Which of these two countries is part of the British Empire?

Some of the cotton is used in mills near Liverpool, but most of it goes farther inland to a great cotton-manufacturing district which centers around Manchester. Find Manchester on the map on pages 70–71 (*F4*) and notice that it is connected with the estuary of the Mersey by a canal. This is the Manchester Ship Canal, and some of the boats loaded with cotton pass by the docks at Liverpool and carry their cargoes directly to the great cotton-manufacturing city. *See Figure 70.*

The next most valuable imports of Liverpool are wheat, flour, and meat. They come chiefly from the United States, Canada, and Argentina. Which of these countries is a British dominion?

You have discovered that Liverpool is the great gateway through which raw cotton enters England. It is also the principal gateway through which cotton goods manufactured in English mills are shipped to distant parts of the world.

Other work in Liverpool. Like all great ports, Liverpool is a manufacturing center because of its advantages for receiving raw materials and shipping away manufactured

Aerofilms from Ewing Galloway, N. Y.

Figure 71. Some of the world's largest passenger ships at Southampton. Find Southampton on the map on pages 70–71 (*G5*) and explain why its harbor is so well protected from storm waves.

goods. It is also a very important *terminus*, or ending place, for railroads from all parts of Great Britain. The railroads that meet here bring large quantities of manufactured goods from all parts of the island to be shipped to distant lands, and carry back large quantities of raw materials and foodstuffs to the inland industrial centers.

Two ports on the North Sea. On the map on pages 70–71 find the cities of Hull (*G4*) and Newcastle on Tyne (*G3*). These are England's leading ports on the North Sea. Because of their location, much of their trade is with the countries bordering that sea and the Baltic Sea.

Hull, on the estuary of the Humber River, is an important ocean gateway for a great woolen-manufacturing district centering round Leeds and Bradford, farther inland. For this reason raw wool is one of its leading imports, and woolen goods are among its exports.

Newcastle, on the estuary of the river Tyne, is a great coal-exporting port. What do you find on the map (pp. 70–71) to explain this fact? While you are looking at the map, find the place where iron ore is mined near Middlesbrough (*G3*). That city has great blast furnaces and steel mills. Steel from Middlesbrough and abundant coal have helped to make Newcastle a great center for the manufacture of machinery and steel ships. The lower Tyne, like the lower part of the Delaware River in our country, is one of the great shipbuilding centers of the world.

Southampton. Southampton, on the southern coast of England, is the port used by some of the largest passenger ships that cross the Atlantic. It was chosen as a port for these great liners because the harbor is deep and well protected from storm waves. *See Figure 71.*

Southampton also carries on much foreign commerce. Foodstuffs and raw materials from distant lands come to this port to be sent inland by rail, and manufactured goods from inland cities are shipped away. Southampton itself is becoming a manufacturing center of importance. Can you explain why?

A list to make. The five most important English ports are described below. Write their names in a list in the order in which they are described. Put stars against the two ports which together carry on half of all the trade of the British Isles.

1. The port which carries on the most trade with distant parts of the British Empire in the Eastern Hemisphere.
2. The port which carries on the most trade with the Americas.
3. The port on the southern coast, used by some of the largest transatlantic liners.
4. Two ports which carry on much trade with countries bordering the North Sea and the Baltic Sea.

Courtesy of Grace R. Stevens

Figure 72. The railroad bridge over the Firth of Forth in Scotland. The bridge is built of steel and is one of the longest in the whole world.

Ports of Scotland

The firths. The Scotch people call the drowned river mouths of their country *firths*. The deep firths of the highland region in the north are much like the fiords of Norway, but those of the central lowland are shallower and more like the estuaries of England. On the map on pages 70–71 find the Firth of Clyde (*E3*) and the Firth of Forth (*F2*). Notice that they lead into the very heart of the central lowland of Scotland. *See Figure 72.*

Glasgow and the river Clyde. If you take a boat trip up the Clyde to Glasgow, you will see huge shipbuilding yards on both sides of the river. The shipyards begin at Glasgow and extend downstream for many miles, and they make the Clyde the greatest shipbuilding river in the world.

The river Clyde was formerly so shallow that ocean ships could not enter it, but it has been deepened by dredging so that large ships can go upstream to Glasgow. The deepening of the river brought so much shipping to Glasgow that this city is now the leading seaport of Scotland. Its population of more than a million makes it the second largest city of the British Isles.

Glasgow is a great manufacturing city, partly because it is a busy seaport, and partly because coal is found close by. Among its great variety of manufactures, ships' engines are of special importance. Explain why.

From Glasgow to Edinburgh. A trip from Glasgow to Edinburgh takes us through the central lowland of Scotland. As we travel through this region we shall see that the people carry on mixed farming. Fields are planted to grain, vegetables, and fodder crops, and cattle and sheep are grazing in the pastures. Why is this lowland the principal farming region of Scotland?

Edinburgh and its port. Edinburgh is a beautiful old city lying at the foot of several hills. On one of the hills is an old castle which was built long ago to protect the city. Before Scotland was united with England in government Edinburgh was the home of the Scottish kings and queens, and Holyrood Palace, where they lived, is still used at times by the British king and queen. Edinburgh has long

Courtesy of Vesta S. Brigham

Figure 73. Edinburgh Castle. The first settlement of Edinburgh grew up around this hill, for the castle served as a fortress where the people could defend themselves from attack. The building in the foreground is the National Portrait Gallery.

From Ewing Galloway, N. Y.

Figure 74. A ship loading coal at Cardiff. From the map on pages 70–71 name the parts of the world to which large quantities of Welsh coal are exported.

been a center of learning, and for this reason the printing and publishing of books, magazines, and atlases is very important there. *See Figure 73.*

The port of Edinburgh is the smaller adjoining city of Leith on the Firth of Forth. Most of the exports of Scotland pass through the port of Glasgow, but Leith is important for its imports, especially of foodstuffs.

Dundee. Farther north, on the Firth of Tay, is the port of Dundee. Here we can visit mills which use large quantities of jute from India. Jute is a plant fiber, and it is used to make twine, rope, and coarse kinds of cloth known as burlap and gunny cloth. Great numbers of sacks, or bags, made of gunny cloth are also manufactured at Dundee, and are exported to distant lands for use in shipping various kinds of farm products.

Cardiff and Belfast

The chief seaport of Wales. On the map on pages 70–71 find Cardiff, the chief seaport of Wales (*F5*). This city is near one of the largest coal fields in Great Britain and is a great coal-exporting center. *See Figure 74.*

Welsh coal is so well suited to smelting that the manufacture of metals and metal products is the most important industry of this part of Great Britain. Cardiff and other cities of the region have large blast furnaces for smelting iron ore, steel mills, and factories for the manufacture of iron and steel products. Most of the iron ore is imported, chiefly from Spain. Tin, copper, and other metal ores are also imported from distant lands to be smelted with Welsh coal and used for the manufacture of many different metal products. The tin is used largely in the manufacture of tin plate, of which tin cans are made.

The seaport of Northern Ireland. Turn to the map again and find Belfast, the capital and chief seaport of Northern Ireland (*E3*). What is the leading import of this city?

Belfast has an excellent harbor lined with shipyards which will remind you of Glasgow. Where do you think the shipbuilders get their supplies of coal, iron, and steel?

The imports of flax suggest that Belfast is also a textile-manufacturing city. Have you ever seen any of the beautiful Irish linens? Belfast is the center for their manufacture. The farmers in the surrounding country raise flax, but they can supply only a small part of all the fiber that is needed by the linen mills. From what countries are large quantities of flax imported? What connection is there between manufacturing and export trade at Belfast?

Reminders of seaports. Name one or more British seaports which come to your mind when you think of the following imports and exports:

1. Imports of raw cotton and exports of cotton goods.
2. Imports of flax and exports of linen goods.
3. Exports of manufactured goods from Scotland.
4. Exports of coal from British mines.
5. Imports of metal ores.
6. Imports of wool.

4. Some Great Manufacturing Districts

The British people began manufacturing very early, and today they are one of the greatest manufacturing nations in the world. As you study further, you will discover that manufacturing in Great Britain owes its growth to somewhat the same conditions which have led to the growth of manufacturing in the northeastern part of the United States. Can you suggest what some of these conditions are?

The industrial districts and the coal fields. Figure 75 shows where the principal industrial, or manufacturing, districts of the British Isles are located. Compare this map with the map on pages 70–71, and you will see that every industrial district in the British Isles except the one around London and the one at Belfast is on or near a coal field. The abundance of coal for power has been one of the most important reasons for the growth of British manufacturing.

Figure 75. Industrial districts of the British Isles.

The Textile Industries

A very old industry. One of the oldest industries in Great Britain is woolen-manufacturing. It began hundreds of years ago in the part of England known as Yorkshire, on the eastern side of the Pennine Range. In those early days all the wool came from sheep pastured in the Pennines, and the spinning and weaving were done by hand. Textile machinery has now taken the place of the spinning wheels and hand looms of long ago, and all the work is done in mills. Today Yorkshire is one of the greatest woolen-manufacturing districts in the world, chiefly because it made such an early start, but also because it has abundant supplies of coal for power. Find this woolen-manufacturing district on Figure 75.

The pasture lands of Great Britain still provide much wool, but not nearly enough for all the mills, and vast quantities are imported from distant lands. Much of it comes from the British dominions of Australia, New Zealand, and the Union of South Africa, and large quantities are imported from Argentina, Uruguay, and the Falkland Islands. Two thirds of all the imports of wool come to the port of London. What two seaports nearer the Yorkshire industrial district also import wool?

Leeds and Bradford. On the map on pages 70–71 find Leeds and Bradford (*G4*), the leading cities of the woolen-manufacturing district. In these cities and in the neighboring towns and villages the making of woolen goods is far more important than any other kind of work. The woolen cloth made in the British mills is some of the best in the world, and it finds markets all over Great Britain and in many distant lands. Much of the cloth that is exported goes by train across the Pennines to the great port of Liverpool. *See Figure 76.*

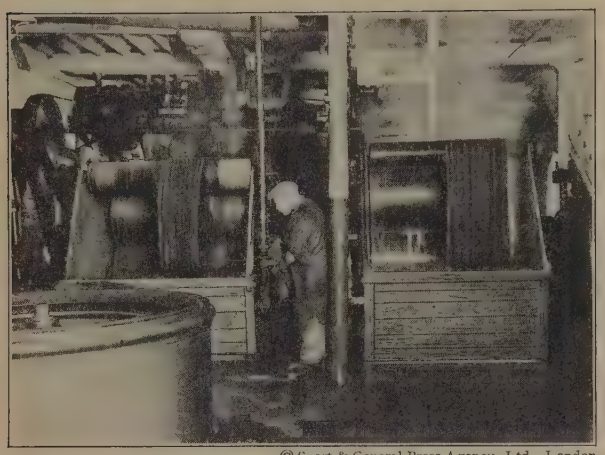

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Figure 76. Scouring newly woven pieces of woolen cloth in a mill near Leeds. Scouring, or cleansing, is one of the processes of finishing the cloth.

Cotton-manufacturing in Lancashire. You already know that the city of Manchester, on the western side of the Pennines, is the center of a district where huge quantities of cotton goods are manufactured. This part of England is known as Lancashire, and it is the greatest cotton-manufacturing district of the whole world. Hundreds of thousands of people in Manchester and the neighboring towns make their living by working in spinning mills, weaving mills, and mills for dyeing and finishing cotton cloth. Find this great cotton-manufacturing district on Figure 75.

Cotton-manufacturing began much later than woolen-manufacturing in Great Britain; for there was no home supply of raw cotton, and it was not until the invention of the cotton gin, in 1792, that large quantities of cotton began to be grown in our Southern States, from which the British draw their largest supplies of this raw material. Today cotton-manufacturing is the most important of all the British industries, and it provides the most valuable of all the British exports.

There were two principal reasons why cotton-manufacturing developed west of the Pennines. One was that Lancashire is on the windward side of England, and therefore it has a moister climate than Yorkshire. If cotton fibers are dry, they are apt to snap in the spinning, and therefore a moist climate is a great advantage in cotton-manufacturing. The other reason was that Lancashire is so conveniently located for receiving raw cotton from the United States. Here, as in the Yorkshire woolen district, the abundance of coal has helped greatly in the growth of manufacturing.

Vast quantities of cotton goods are shipped from this great manufacturing district to the British colonies, to tropical lands in distant parts of the earth, and to China, where there are millions of people who wear cotton clothing. Through what port do most of the cotton goods leave Great Britain?

Cotton and woolen mills in Scotland. Scotland has a cotton-manufacturing district centering around Glasgow, and a woolen-manufacturing district in the valley of the river Tweed, but they are far less important than the great textile districts of Lancashire and Yorkshire in England.

Linen-manufacturing. The greatest linen-manufacturing district in the British Isles is in Northern Ireland, centering in and around the city of Belfast. What did you discover about the importance of this industry in connection with the foreign trade of Northern Ireland?

Industries depending on Iron and Steel

Iron ore in Great Britain. On the map on pages 70–71 find the places where iron ore is mined in Great Britain. In this country, as in our own, the abundance of iron ore and coal has led to the development of many industries which make use of iron and steel. The mines of Great Britain provide from one half to two thirds of the iron ore used in the blast furnaces. The rest of the ore is imported, chiefly from Spain, northern Africa, and Sweden.

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Figure 77. Some of the blast furnaces at Middlesbrough. The owners of this plant also own coal mines, iron mines, and limestone quarries. Explain why.

You already know that there are blast furnaces and steel mills at Middlesbrough and in southern Wales. There are others at various places where iron ore and coal can be brought together easily. *See Figure 77.*

Birmingham and the "Black Country." On the map on pages 70–71 find Birmingham (*G4*). This is the largest city of the great industrial district known as the "Black Country." The Black Country has many coal mines, and it is crowded with towns which manufacture all kinds of products of iron and steel. *See Figure 78.*

The special work of the Black Country began long ago when first iron ore and then coal were discovered in the district. Today its blast furnaces and steel mills produce only a part of the iron and steel used in its factories. Huge quantities of these metals come from other parts of Great Britain to the Black Country, where they are used to make all kinds of iron and steel products, from needles and nails to automobiles and locomotives. *See Figure 79.*

Birmingham has become the largest city and the greatest manufacturing center of the Black Country chiefly because it is a meeting point for roads, railroads, and canals from all directions. Because it is the great railroad center of the Black Country, it is the principal distributing point for the manufactures of that district.

Sheffield. A short distance south of the woolen-manufacturing district on the eastern side of the Pennines is another industrial district where huge quantities of iron and steel products are made. This district centers around Sheffield. You may have heard of Sheffield knives, for this city long ago became famous for its manufactures of cutlery, or cutting tools.

Find Sheffield on the map on pages 70–71 (*G4*). The discovery of iron ore and coal gave this city its start long ago as a center for the manufacture of iron and steel. Today all kinds of small tools and hardware are made in Sheffield and the neighboring towns, and Sheffield scissors, knives, razors, and other cutlery are sold in many distant parts of the world.

From Ewing Galloway, N. Y.

Figure 78. British miners at a coal mine near Birmingham. Coal-mining provides work for many thousands of men in Great Britain. Why are the coal-mining districts also manufacturing districts?

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Figure 79. In an automobile factory near Birmingham. The framework and engines of these cars have been completed, and are ready for the bodies.

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Figure 80. An ocean freighter being built in one of the shipyards on the river Tyne. What advantages has Great Britain for building ships of steel?

Other Industries

The English potteries. Between the Birmingham iron-and-steel district and the Lancashire cotton district are the "pottery towns." The largest of them is Stoke on Trent. These towns manufacture all kinds of pottery, from the finest china to the coarsest earthenware. Find the pottery district on Figure 75.

The principal raw material used in the making of pottery is clay, and the pottery towns grew up long ago where large deposits of clay suitable for this work were found. Today much of the best clay has been used up, and supplies are brought from other parts of England. But the pottery towns still lead in this industry, partly because they made such an early start, and partly because they are on a rich coal field.

Shipbuilding. You already know of three places in the British Isles where shipbuilding is a great industry. Where are they? There are still other centers of this industry at various places along the coast, for the British people need thousands of ships to carry on their trade with other parts of the world. They have more merchant ships than any other nation, and they build ships for many nations besides themselves. *See Figure 80.*

The variety of manufactures. You know now what the most important British manufactures are, but there are many, many others. In fact, it would be hard for you to think of anything that is not manufactured somewhere in the British Isles. The number of different industries is enormous, and far more people are engaged in manufacturing than in any other kind of work.

Something to prove. Prove your knowledge of the great industrial districts of the British Isles by giving the correct names to complete the following sentences. As you do so, point to the district on the map and explain its advantages for the kind of manufacturing for which it is famous.

1. The great cotton-manufacturing district centers around _____ in _____.
2. The great woolen-manufacturing district centers around _____ and _____, in _____.
3. The two leading districts in the manufacture of iron and steel products center around _____ and around _____.
4. The greatest center for the smelting of metal ores is in southern _____.
5. The great linen-manufacturing district centers around _____ in Northern _____.
6. The greatest shipbuilding district is along the river _____ in _____.

5. Farming and Fishing

Thus far we have visited the British seaports and industrial districts where trade and manufacturing are the most important kinds of work. In the country districts we shall find farmers raising crops and live stock, and on the shallow seas surrounding the islands we shall find many fishermen busy with their work. What reasons can you suggest for the importance of farming and fishing in the British Isles?

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Figure 81. A farmyard in the southern part of England. From what you see in the picture, what products do you think this farmer probably sells to the market men in the nearest town or city?

Glimpses of the farming districts. In the lowlands of the British Isles, away from the cities, you will find many small farms and many large country estates. On the estates there are fine old houses surrounded by parklike grounds, and even the farmers' cottages are unusually attractive with their thatched roofs, their neatly trimmed hedges, and their flower gardens. *See Figure 81.*

Scattered through the farming districts are many little villages with narrow streets and thatched cottages overgrown with roses. Some of the villages have a factory or two, but they are chiefly market centers for the surrounding farm lands.

The need for food. As you travel through the farming regions, you will see very little land lying idle. The British Isles are so densely populated that as much land as possible must be used for raising crops and live stock to provide the people with food. But the islands are so small and so many parts of them are hilly or mountainous that the amount of good farming land is limited, and so the farmers can produce only part of the food that is needed. For this reason large quantities of foodstuffs are imported from other parts of the world.

Specialized farming. In order to make the best possible use of the farm lands, most of the farmers specialize in certain products, just as the farmers in New England do. Near each of the larger cities there are dairy farms and poultry farms. Some of the farmers specialize in raising pigs, for the English people are very fond of bacon. Others specialize in raising vegetables and fruits for the city markets.

On the map on pages 70–71 find the Scilly Islands (*D6*) and the Channel Islands (*F6*). The climate of these islands is very mild, and the farmers raise early vegetables to send to the markets in the British cities.

Wheat lands. The drier part of the plain of England, northeast of London, is the only part of the British Isles where the climate is well suited to wheat. This is a winter-wheat section, where the farmers plant the seed in the autumn and harvest the grain in the early summer. *See Figure 82.*

The wheat farmers also raise crops to fatten cattle for market. They buy the cattle from Ireland and Scotland, and from

By Ewing Galloway, N. Y.

Figure 82. Harvesting winter wheat on an English farm. The wheat is being cut with a reaper, and the two men at the left are stacking the bundles in shocks to dry in the sun. At what season of the year was this picture taken? Give a reason for your answer.

other parts of England. In what belt in our country do the farmers fatten large numbers of cattle for market?

How the hilly lands are used. Many of the hilly lands of the British Isles are used as pastures, partly for cattle, but more largely for sheep. In this way they help to provide the British people with wool and meat. *See Figure 83.*

Some parts of the hilly lands belong to wealthy people who keep them for private hunting grounds, and others are playgrounds for all who wish to visit them. The beautiful lake district of England and the part of Scotland where Loch Lomond is located are visited each year by thousands of British people and by many tourists from other lands.

British fisheries. If you were to take a trip around the coasts of the British Isles, you would soon discover that the people depend on the shallow seas surrounding the islands and also on the waters farther north between Scotland and Iceland for part of their food supply. The fishermen bring in cod, herring, haddock, sole, mackerel, and other kinds of fish.

On the map on pages 70–71 find Aberdeen in Scotland (*F2*), and Hull, Grimsby, and Yarmouth in England (*G–H4*). These are the four greatest fishing ports of the British Isles. On what sea are they located? You can easily guess from their location that the North Sea is the greatest of the fishing grounds near the British Isles.

At the fishing ports you will see many sights to remind you of the fishing ports along the coast of North America from New England to Newfoundland. You may be there when the steam trawlers and the smaller sailing boats are starting off for the fishing banks, or when they return loaded with fish. Near the wharves where the fishing boats land their catch you will see racks for

Figure 83. Sheep grazing in the Highlands of Scotland. The rougher parts of the British Isles make excellent sheep pastures, and Great Britain is one of the leading sheep-raising countries of Europe.

drying codfish, and buildings where herring are smoked and cured. You will also see the special trains that hurry the fresh fish to the cities farther inland. *See Figure 84.*

Thousands of boys in the coastal towns grow up loving the sea, and many of them become fishermen while they are still very young. Some who begin work as fishermen later become sailors on the British merchant ships which cross and recross the seas.

Some things to explain. Explain why

1. The shallow seas around the British Isles are rich fishing grounds.
2. The irregular coast line of the British Isles helps the fishermen.
3. The British Isles provide large markets for fish.

By Burton Holmes from Ewing Galloway

Figure 84. A view of one of the fish wharves at Aberdeen, Scotland. At the left are some of the fishing boats, and at the right are quantities of codfish, cleaned and ready to be salted and dried. Of what New England fishing port does this remind you?

Some farming questions. In answering these questions, you will need to recall some of the things that you learned about farming in the United States.

1. Suppose two American farmers, one from the corn belt and the other from New England, should visit the farming districts of the British Isles. Which one would see more things to remind him of home? Why?
2. More acres of land in the British Isles are planted to oats and hay than to any other crops. How is the climate suited to the raising of oats and hay?
3. Find the wheat lands of the British Isles on the map on pages 70–71. What "climate reason" can you give to explain why they are located there rather than farther north or west?
4. Why are there no great cattle ranches in the British Isles?
5. Why are there many dairy farms, poultry farms, and market gardens near the large cities in the British Isles?
6. Why is it impossible for the farmers of the British Isles to supply enough food for all the people?

6. The Irish Free State

You already know that the Irish Free State is a self-governing part of the British Empire, just as the dominions are. It is quite different from Great Britain, for it is chiefly an agricultural country, and the people produce a surplus of foodstuffs for export. Do you know why farming, rather than manufacturing, is the principal kind of work there?

Farm lands and pasture lands. As you travel through the Irish Free State, you will notice that more of the land is used for pasture than for crops. That is because much of the lowland region is swampy and the uplands farther north and south are hilly. Many of the swampy and hilly lands are not well suited to the raising of crops, but they are covered with rich green grass which makes excellent pasturage for cattle.

A visit to an Irish farm. If we visit one of the better farms, we shall learn that the farmer uses about one fourth of his land for crops, and the rest for pasture. In the farm-

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Figure 85. Irish farmers at a milk station. The farmers sell the cream, which is separated from the milk at the station, and take the skimmed milk home to feed to their pigs and chickens.

yard we shall find pigs and chickens, and in the pastures we shall see dairy cows and beef cattle. We may see several fine horses too, for the Irish are very fond of horses, and they raise many for hunting and racing.

Near the house we shall find a vegetable garden, and when we visit the cultivated fields we shall learn that the farmer's chief crops are potatoes which he raises for food, and oats, hay, and other crops which he raises to feed his live stock. He makes his money by selling live cattle and pigs, poultry, eggs, and cream. *See Figure 85.*

Peat bogs. As we travel through the Irish Free State we shall not find any great coal-mining districts as we did in Great Britain, for Ireland has but few coal seams thick enough to be worth mining. But we shall not go far before we see people working in the peat bogs. Peat is a fuel which is formed in swamps and bogs by the decaying of leaves, wood, and roots. The people dig it from the bogs, cut it in blocks, and dry it. It makes a smoky fire and is of no use for making steam power, but it provides many of the Irish people in the country districts with fuel for use in their homes. *See Figure 86.*

Manufacturing. The lack of coal has been a great handicap, or hindrance, to manufacturing in the Irish Free State, and at present the leading industries are those which make use of the farm products. Among them the making of butter and cheese, the milling of grain, and the curing of bacon are especially important.

Recently the government has worked out a plan for using the water power of the river Shannon to provide hydroelectricity for the country. A power plant is being built near Limerick, and when it is completed hydroelectricity will be sent over wires to Dublin and other cities. In time this will probably lead to a much greater development of manufacturing in the Irish Free State.

Seaports and trade. On the map on pages 70–71 find Dublin, the capital of the Irish Free State (*D4*). Dublin is the largest city of the country, and the chief port for trade with Great Britain. *See Figure 87.*

After what you have learned about farming in the Irish Free State, you will not be

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Figure 86. Cutting peat. About one seventh of the Irish Free State is covered with peat bogs, some of which are more than forty feet in depth.

By Burton Holmes from Ewing Galloway

Figure 87. One of the busy streets in the city of Dublin, the capital of the Irish Free State. Notice the "two-story" electric cars in the picture.

surprised to find that live cattle, butter, eggs, and bacon are among the leading exports. Large quantities of these farm products are shipped from Dublin across the Irish Sea to Liverpool.

In exchange for its exports of foodstuffs, the Irish Free State imports large quantities of British manufactured goods. Dublin is the chief center for the distribution of these products. How does its location explain its importance as a gateway for trade with England?

Cork, on the southern coast of Ireland, is another port from which large quantities of foodstuffs are shipped to Great Britain. Find Cork and Cobh on the map on pages 70–71 (*C5*). Cobh is on an island in the harbor of Cork. It will remind you of Southampton, in England, for it is a port of call for some of the great passenger liners which run between America and England.

Some things to explain. 1. Explain why (1) England provides good markets for the surplus farm products of the Irish Free State, and (2) the Irish Free State provides good markets for English manufactures.

2. Explain why the leading exports of the Irish Free State are live-stock products.

7. The Growth of British Manufacturing and Commerce

The most valuable exports from Great Britain are (1) cotton goods, (2) iron and steel goods, (3) machinery, (4) coal, and (5) woolen goods. The most valuable imports are (1) meats, (2) cotton, (3) wheat and flour, (4) wool, and (5) butter.

By studying these lists you should be able to answer the following questions:

1. What kind of work in Great Britain provides a large surplus of products for export?

2. What great needs of the British people are supplied in part through foreign commerce?

Advantages for manufacturing. In visiting the industrial districts of Great Britain you discovered that British manufacturing owes its growth largely to the following advantages:

1. An abundance of coal for power.
2. Large supplies of iron ore.
3. A dense population, providing millions of factory workers and a large home market for manufactured goods.
4. Many good seaports, making it easy to import raw materials and export manufactured goods.
5. Large markets for manufactured goods in distant parts of the British Empire.

In addition to these advantages, we should remember that the British made an early start in manufacturing, gaining the lead over nations which began later.

In Great Britain, as in the United States, the building of railroads and the more recent use of automobiles and motor trucks for transportation have also helped greatly in the growth of manufacturing.

Fuel and power handicaps. In spite of all their advantages for manufacturing, the British people have certain handicaps to overcome. They have almost no petroleum, and so they must get nearly all their fuel oil and gasoline from distant lands.

BRITISH EMPIRE

	Area in Square Miles
Great Britain	89,041
Northern Ireland	5,994
Irish Free State	26,592
Possessions in Europe	124
Union of South Africa	471,917
Other possessions in Africa	3,345,484
India	1,805,332
Other possessions in Asia	182,551
Australia	2,974,581
New Zealand	103,568
Pacific Islands	199,585
Canada	3,684,723
Newfoundland and Labrador	152,734
Other possessions in America	115,921
Total	13,158,147

	Population
Great Britain	42,919,710
Northern Ireland	1,248,000
Irish Free State	2,971,992
Possessions in Europe	246,000
Union of South Africa	6,928,580
Other possessions in Africa	45,568,820
India	318,942,480
Other possessions in Asia	12,633,205
Australia	6,262,720
New Zealand	1,344,469
Pacific Islands	1,160,000
Canada	9,519,220
Newfoundland and Labrador	266,154
Other possessions in America	2,236,428
Total	452,247,778

Map Plate, Patented July 5, 1921 · Method of Making Maps, Patented July 5, 1921

The rivers of Great Britain are too small to provide much water power for making electricity. The people make good use of what water power they have, but they must depend on steam power to make most of their electric power. This is a great handicap, for water power is the cheapest source of electricity.

The need for raw materials and markets. The British people need more iron ore than their mines can produce, and they have few metal ores other than iron in their country. Therefore they must purchase additional supplies of iron ore and many kinds of metals from other countries. They cannot produce enough wool for their woolen mills, and because of the cool climate they cannot grow any of the cotton needed for their greatest manufacturing industry. In order to keep their mills and factories running, they must import large quantities of these and many other raw materials from distant lands.

Even though Great Britain is densely populated, the people do not need all the goods produced in the manufacturing plants. The manufacturers must find large markets in other lands if they are to sell all they produce.

Turn over to page 92.

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MAP STUDIES

1. About how far north of the equator are the British Isles? Give your answer in degrees of latitude. 2. What part of North America is in the same latitude as the British Isles? 3. What two British dominions are in North America? 4. Which one of them extends north of the arctic circle? 5. What British possessions in the Western Hemisphere are tropical lands?

6. What continent in the Eastern Hemisphere is a British dominion? 7. In what part of that dominion is the climate best suited to white people? Why? 8. What other British dominion is southeast of Australia? 9. In what zone is that dominion?

10. What large part of Asia belongs to the British Empire? 11. What part of India is within the tropics? 12. What tropical island off the southern coast of India belongs to the British?

13. What British dominion is located in the southern part of Africa? 14. In what zone is most of that dominion? 15. What does that fact suggest with reference to the healthfulness of the climate for white people?

16. Name the British possessions which extend northward in an unbroken line from the Union of South Africa to Egypt. 17. What can you say about the climate of those possessions? 18. In what oceans do you find islands belonging to the British people?

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Figure 88. Loading locomotives for export at Newcastle, England. The ship, the loading machinery, and the locomotives were all built at Newcastle.

The problem of food supply. The British Isles are so small, the population is so dense, and so many of the people are engaged in manufacturing that the farmers and fishermen cannot supply enough food for all the people. Therefore the British must buy part of their foodstuffs from countries which have extra supplies to sell.

The growth of commerce. From all these facts you can see that as population has increased in Great Britain, and manufacturing has become the most important kind of work, the British people have been faced with three great problems:

1. How to obtain enough raw materials for their factories.
2. How to increase their food supplies.
3. How to find markets for their surplus manufactures; that is, the manufactures which they do not need themselves.

They have solved these problems by building up a great fleet of merchant ships and developing a large foreign trade. In this work they have been helped greatly by their island location and their irregular coast line with its many good harbors. *See Figure 88.*

Long ago the British began to send trading ships to distant lands, and it was partly through trade that they gained the lands of their great empire. As they became colonizers, or settlers of new lands, they developed farming and other kinds of work in their colonies which would help to supply the home factories with raw materials and the home markets with food. As more and more people went to live in the colonies, they provided *colonial markets* for manufactured goods from the home country; and today the British people have an enormous trade with their colonial possessions.

At the same time the British have been building up trade with foreign countries, buying raw materials and foodstuffs from them, and selling them manufactured goods. Thus commerce and manufacturing have grown side by side, each one helping the other.

A very important reason for the remarkable growth of British commerce and manufacturing is the people themselves. They have always been a strong, energetic nation; and because of this, they have been able to make the best use of the resources of their little island country and to find ways of overcoming its handicaps.

Map work. Use the map on pages 70–71 to answer the following questions:

1. What foodstuffs and raw materials do the British import from their three dominions in the Old World? from the Americas? from India, Ceylon, and the East Indies?
2. What metals do the British import in large quantities from the Americas? What fuels do they import from the United States?
3. What distant parts of the British Empire provide valuable markets for manufactures?

Special credit work. Many kinds of cloth from British mills are sold in drygoods stores in our country. Visit such a store and ask if you may have samples of British goods to show to your classmates.

Sentences to complete. Complete the sentences below by giving the correct names to fill the blank spaces:

1. The British Isles are made up of the two large islands of _____ _____ and _____ and many small islands.

2. The three parts of Great Britain are _____, _____, and _____.

3. Ireland is divided politically into _____ _____ and the _____ _____ _____.

A list to make. Write down the names of the cities described below. When you have finished, you will have a list of the eight largest cities in Great Britain.

1. The capital of the British Empire.
2. The leading seaport of Scotland.
3. The great industrial city of the Black Country.
4. The greatest cotton-importing port in the world.
5. The largest city of the Lancashire cotton-manufacturing district.
6. An English city famous for the manufacture of cutlery.
7. The largest city of the Yorkshire woolen-manufacturing district.
8. The old Scottish city near the Firth of Forth.

Matching cities and manufactures. Each city in the first column below is noted for one of the kinds of manufactures given in the second column. Match the cities and their manufactures correctly.

Belfast	cotton goods
Birmingham	iron and steel
Cardiff	linen goods
Glasgow	pottery
Leeds	ships
Manchester	tin plate
Stoke on Trent	woolen goods

Something to prove. Prove by answering the following questions that you understand why the British are a great manufacturing nation:

1. What advantages have the British for getting raw materials from all parts of the world?

2. What mineral resource have they which provides power for their mills and factories?

3. Why have they no trouble in getting workers for their mills and factories?

4. What advantages have they for marketing manufactured goods?

A trade test. 1. Some of the important imports and exports of the British Isles are given below. Make a list of those which are imports, and another of those which are exports.

coal	machinery	cotton goods
flax	raw wool	iron and steel
meats	linen goods	wheat and flour
butter	raw cotton	woolen goods
iron ore	mineral oils	hides and skins

2. Explain why the British people need to import large quantities of the products in your first list.

3. What kind of work provides all but one of the products in your second list?

Giving reasons. Complete each sentence below by giving reasons for the fact which it states:

1. The British are more nearly able to supply their needs for fish than for any other important kind of food because _____.

2. The British people produce more foodstuffs per acre of farm land than the people of the United States do, yet they have to import large quantities of foodstuffs because _____ _____.

3. The building of merchant ships is a very important kind of work in the British Isles because _____.

4. It is fortunate that Great Britain has many good harbors because _____.

5. London is the largest city of the British Isles because _____.

6. Liverpool is the leading seaport for trade with the Americas because _____.

7. Trade with the United States is very important to the manufacturers of Lancashire because _____.

8. The people of the Irish Free State are able to help to provide the people of England with foodstuffs because _____.

9. The Irish Free State is not a great manufacturing country because _____.

AFRICA
Scale of miles
0 200 400 600 800
Water less than 500 ft. deep
Land below sea level
Wet-weather streams
Grasslands and cultivated areas
Temperate forests
Tropical forests
Oases
Semideserts, deserts, and barren mountain slopes

III. BRITISH LANDS IN AFRICA

Foreword. Across the Mediterranean Sea from Europe lies Africa. In this great continent there are but three independent countries: Egypt, Ethiopia, and Liberia. All the rest of the African lands belong to one or another of the European nations.

About one third of the continent of Africa is under the control of the British people. Find the British lands in Africa on the map on pages 90–91 and name the one that is a self-governing dominion. The rest are colonies, protectorates, and dependencies.

As you study about the lands in Africa which are controlled by the British and other European nations, find answers to the following questions:

1. Of what value are possessions in Africa to the European nations?
2. In what ways are the European people helping the native people of Africa?

1. Africa and its People

Do you know why so much of Africa is controlled by European nations? This section will help you to discover some of the reasons.

The native peoples. Africa is the homeland of the negro race; and even though many people born in Europe or descended from Europeans now live in certain parts of the continent, there are far more colored people than white people there.

Before the coming of the white men most of the natives of Africa obtained their food by hunting, fishing, and gathering wild nuts, fruits, and berries. Some of them had little gardens where they raised a few vegetables, but their farming was of the simplest kind.

Some of the native people of Africa now work on farms and plantations and in mines owned by white people, and some help to care for live stock. Many, however, still live almost as simply as their forefathers did.

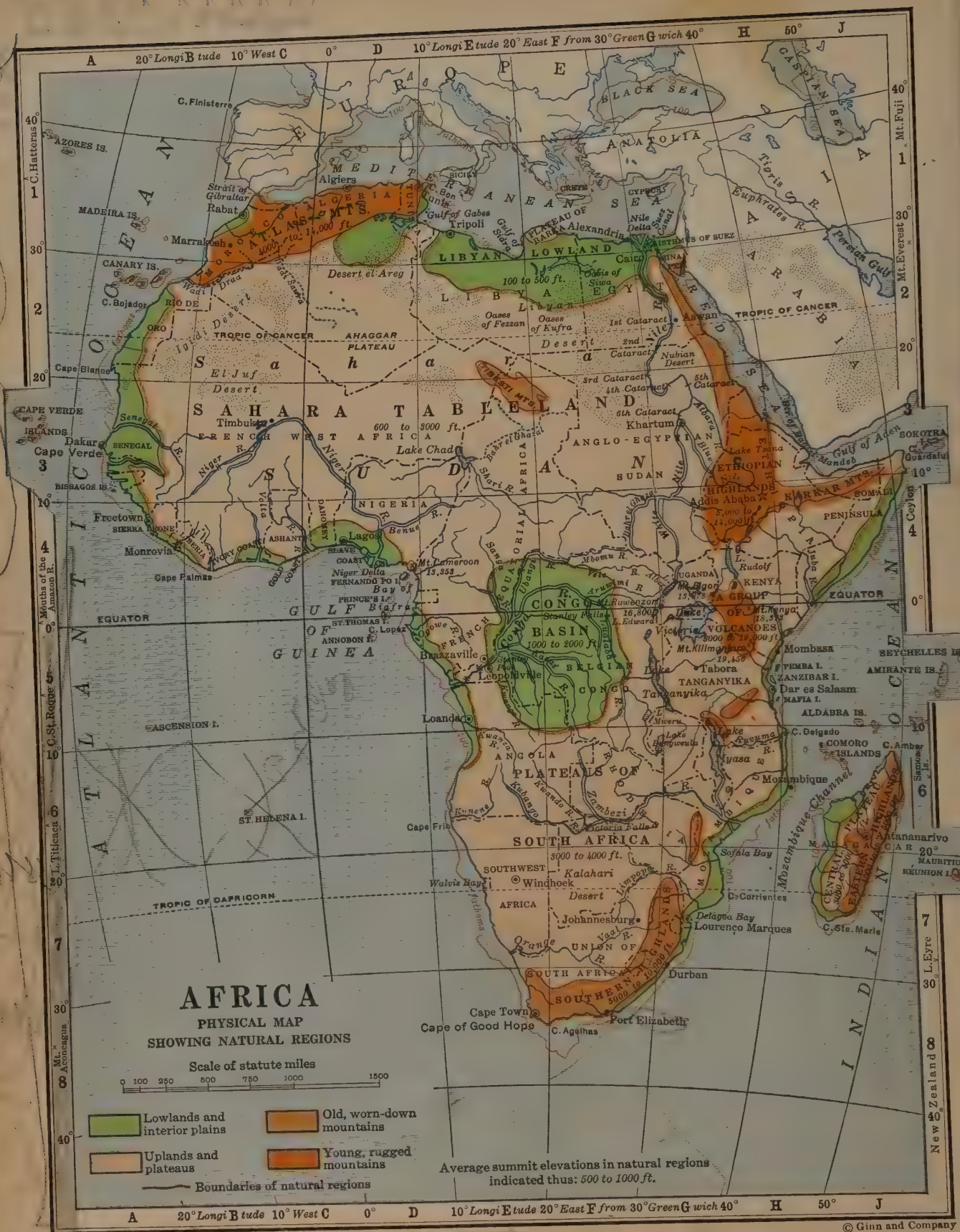
People from Asia. Many of the people now living in the northern part of Africa are descendants of white people who came from southwestern Asia long ago. Other Asiatic people, who have come to Africa more recently, are natives of India. They have been brought to some of the British possessions to work on plantations and to help in the building of railroads. Since their homeland is warm, they are able to work in a hot climate.

People from Europe. Most of the white people who have settled in Africa during the last hundred years have come from Europe, principally from the Netherlands, France, Germany, and Great Britain.

Among the Europeans who have become interested in Africa, the British and the French have done more than any other nations to develop farming, mining, and stock-raising in that continent. Little by little, through their work in Africa, they have come to control many of the most valuable lands of the continent.

Why Europeans control most of Africa. One reason so much of Africa is under the control of Europeans is that most of the groups of native people are very backward, and they have never learned to make the best use of the lands in which they live. Therefore, when white men from Europe came to Africa and began to develop the farm lands and grazing lands and to open mines and build railroads, it was natural that they should become the rulers of the native peoples.

Getting acquainted with Africa. The British lands in Africa include so much of the continent that you will find it helpful to get better acquainted with Africa as a whole before you study them. The maps on pages 96 and 97 will help you to do this. Before you read further, work out the map studies on page 97.



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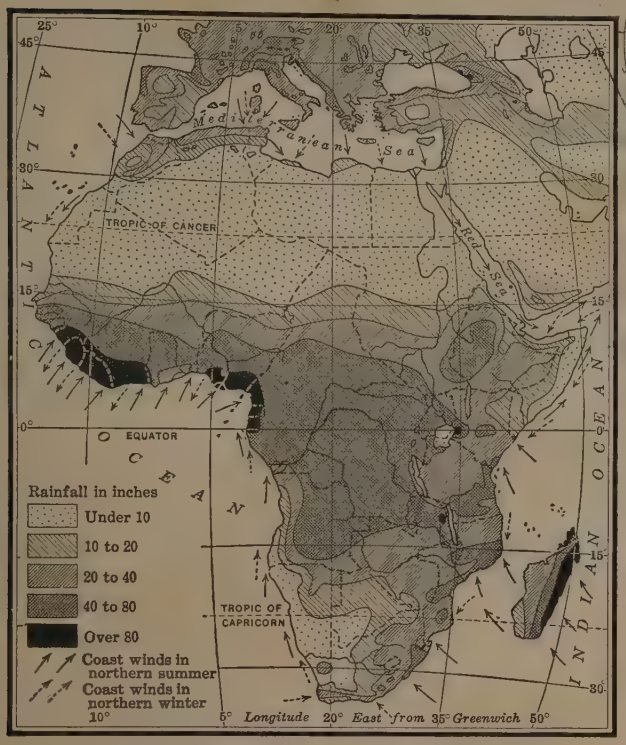

Figure 89. Distribution of rainfall in Africa.

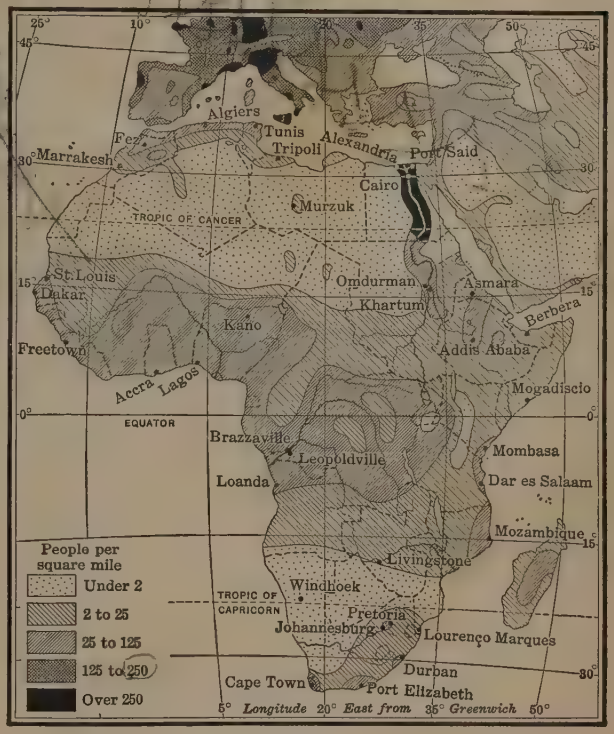

Figure 90. Distribution of people in Africa.

MAP STUDIES

1. On the map opposite this page trace the tropics of Cancer and Capricorn across Africa. 2. Is most of Africa between the tropics, or outside the tropics? 3. What does that tell you about the climate? 4. What parts of Africa do you think are most healthful for white people? Why?

5. Through what large river basin of Africa does the equator pass? 6. From Figure 89 describe the rainfall in the Congo Basin. 7. What kind of forests do you expect to see in that hot, rainy region? Check your answer by the map on page 94.

8. Where in Africa do you find young, rugged mountains? old, worn-down mountains? 9. Find Mount Kilimanjaro, the highest mountain in Africa (*G5*). How high is it? Is there any mountain peak in the United States as high as that? 10. Describe the surface of the land in the greater part of Africa.

11. What does Figure 89 show about the rainfall in the great plateau region of northern Africa? 12. What great desert is located there? 13. Find the Sahara Desert on the map on page 94. 14. How do you account for the oases there? 15. What river valley forms a long, narrow oasis through the eastern part of the Sahara Desert? 16. How does the population of the northern part of that valley compare with the population in the rest of the desert? in the rest of Africa?

17. On the map opposite find the region of northern Africa known as the Sudan. 18. Does it have more rainfall than the Sahara, or less? 19. The Sudan is a *savanna*, or tropical grassland. Turn to the map on page 94 and notice that the tropical forest of the Congo Basin is bordered on the north, east, and south by savannas. 20. In your studies of the Americas where did you find a tropical forest bordered on the north and south by savannas? In the basin of what river is that forest?

21. On Figures 89 and 90 find the part of Africa south of the tropic of Capricorn. 22. What connection can you see between the distribution of rainfall and the distribution of population in that part of the continent?

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Finding reasons in climate. Give a "climate reason" for each of the following facts:

1. Many of the native peoples of Africa do not like to work hard.
2. The Congo Basin and the other tropical lowlands of Africa are unhealthful for white people.
3. The largest numbers of white people in Africa live north of the tropic of Cancer and south of the tropic of Capricorn.

Something to do. 1. Turn to the map on pages 382–383 and tell what European people first explored the coast of Africa. How does the location of their home country help to explain their explorations along the African coast?

2. Trace the route of Vasco da Gama, the Portuguese sea captain who first found the route around Africa to India in 1497–1498.

3. Study the routes of exploration in southern and central Africa by Livingstone and Stanley. David Livingstone was a Scotchman. Henry M. Stanley was born in Wales, but he lived most of his life in the United States. How many years after Vasco da Gama made his voyage did Livingstone begin his explorations in Africa? Can you think of any reasons why the coasts of Africa were well known long before the interior was explored?

Courtesy of South African Railways and Harbours

Figure 91. Part of the water front at Cape Town, showing some of the wharves and warehouses. Find Cape Town on the map on page 98 (*E 8*). In what part of the Union of South Africa is it located? What reason does the map suggest for the name of this city?

2. The Union of South Africa

In 1910 four British colonies — Cape of Good Hope, Natal, Transvaal, and Orange River Colony (now called Orange Free State) — united to form the self-governing dominion known as the Union of South Africa. This dominion is about four fifths as large as Alaska and is the most important British possession in Africa. The first European settlers there were Dutch people, and today there are more Boers, or South Africans of Dutch descent, than British people in the Union.

Find the Union of South Africa on the map on page 98 and study its exports and imports. Judging from the exports, what kinds of work do you think are most important in this dominion? Judging from the imports, do you think South Africa is a great manufacturing country? Check your answers to these questions as you study this section.

Map work. On the map of the British Empire which you are making, color the Union of South Africa pink.

An ocean voyage. Almost any week in the year we could leave London on a ship bound for Cape Town, in South Africa. We might make the ocean journey without a stop, or we might go on a ship which stops at Ascension Island and St. Helena Island. Find these islands on the map on page 98 (*B5* and *C6*). They are British islands, and they serve as stations in the south Atlantic Ocean where ships may stop for repairs or to take on supplies of food and coal. They are also radio stations where messages may be received and forwarded through the air.

Cape Town. At the end of a voyage of about twenty-five days our ship will reach Cape Town, and we shall find ourselves in one of the best and most attractive harbors of South Africa. *See Figure 91.*

Courtesy of South African Railways and Harbours

Figure 92. Ships taking on wool and coal at Durban. Find some bales of wool and some coal cars in the picture. What explanation can you give for the fact that Durban, rather than Cape Town, is the chief South African port for trade with India?

Cape Town is the port of South Africa nearest to England, and it is a port of call, or stopping place, for ships sailing back and forth between Australia and the British Isles. Since the greater part of the trade of South Africa is with the home country, Cape Town is the leading seaport. It is also the second city in size in South Africa.

Other gateway cities. Other seaports where we might land in South Africa are Port Elizabeth, East London, and Durban. They are on the southeast coast, and are connected by railroads with Cape Town and with the inland cities. They serve as gateways through which products of some of the mines, ranches, and farms farther inland pass on their way to distant lands. Durban, the largest of the southeastern ports, is an important coaling station for ships, and it exports large quantities of coal to India. Locate Durban on the map on page 98 (*G8*) and find the place where the coal comes from. Then study Figure 92.

Natural regions of South Africa. Turn to the map on page 96 and study the coast of South Africa. Notice that on the east there is a narrow coastal lowland. Notice also that if we travel inland from any one of the seaports of South Africa, we must climb the slopes of an old mountain region. The mountains are much higher than the Appalachian Mountains of our own country, for they rise from 5000 to 10,000 feet above the sea. From their summits the land slopes downward to the interior plateau.

The people of South Africa call the interior plateau the *veld*. When we reach the veld, we shall find ourselves in a gently rolling region from 3000 to 4000 feet above the sea. The highest part is in the east and is called the high veld.

How temperatures differ in the natural regions. The map shows that South Africa is close to the tropic of Capricorn, in the warmest part of the south temperate zone. You will get a good idea of its latitude if you will remember that Durban is about as far south of the tropic of Capricorn as New Orleans is north of the tropic of Cancer. With this in mind, you will not be surprised to learn that the weather is never very cold, even in the winter. What are the winter months in the south temperate zone?

Temperatures differ, however, in the different regions. The eastern coastal lowland is hot in summer and warm in winter, and there is never any frost there. The veld, which is much higher, is warm in summer, but not nearly so hot as the coastal lowland; in winter it is so cool that frosts often occur.

Differences in rainfall. South Africa lies in the belt of the southeast trade winds. When these winds reach the coast of Africa,

they are heavily laden with moisture which they have gathered up in blowing over the Indian Ocean. As they rise to cross the mountains, they become cooler and give up much moisture. For this reason there is abundant rainfall on the eastern lowland and on the eastern slopes of the mountains.

By the time the winds have crossed the mountains and begun to move down the western slopes they have lost much of their moisture. Therefore the rainfall on the western slopes and in the high veld is lighter, and it grows less and less as the winds move farther and farther northwest.

Courtesy of South African Railways and Harbours

Figure 93. A sheep ranch in the South African grassland known as the veld. In the veld the rainfall grows less and less from east to west like the rainfall in the interior plains of the United States.

Differences in vegetation. The word *vegetation* means plant and tree growth. When we speak of the *natural vegetation* of a region, we mean the plants and trees that grow without the help of man. When we speak of the *cultivated vegetation*, we mean the plants and trees planted and cared for by the people. As we travel from east to west across South Africa, we shall find that the vegetation changes from region to region because of differences in elevation and rainfall.

The subtropical belt. On the warm, moist eastern lowland the vegetation is subtropical, or almost tropical. Palm trees and wild banana plants grow there, and the people raise sugar cane and other subtropical crops.

The eastern mountain slopes. We shall find that the subtropical vegetation extends inland to an elevation of about 1000 feet. Then, as we begin to climb the mountain slopes, we shall see grasses and bushes of the temperate zone, and on the higher and cooler slopes, above 4000 feet, we shall find temperate forests.

The grassland. When we reach the high veld on the northwestern side of the mountains where the rainfall is lighter, we shall be in a temperate grassland which will remind us of the prairies of our country. There are few trees here except those along the streams and those which have been planted for shade. As you would expect, large numbers of cattle and sheep graze on the natural grasses. *See Figure 93.*

Scrubland and desert. Farther west we pass into a still drier part of the veld, which is called *scrubland*. Here the vegetation is made up of poor grasses and shrubs. Goats graze in this region, but the pasturage is too poor for cattle and sheep. Before we reach the western coast, we find that both plants and animals have disappeared. We are now in a desert where there is too little rain for vegetation of any kind, and bare, rocky hills and sand dunes surround us.

The southwestern corner of Africa. The region around Cape Town, in the southwestern corner of Africa, has quite a different climate from the rest of the Union. In the summer it is hot and dry like the coast farther north. At that time of year the grass is withered by the hot sun and the landscape is brown and dusty. But this part of the con-

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Figure 94. Lunch time in a diamond compound at Kimberley. The miners are given food and living quarters in the compounds, but they cannot go outside the inclosures while they are working in the mines.

tinent is just far enough south so that during the winter season in the Southern Hemisphere, when all the wind belts move northward, it is in the belt of the westerly winds of that hemisphere. These winds, blowing from the Atlantic Ocean, bring rain. The people are thankful for the winter rains because when they come fresh grass springs up, wild flowers blossom in abundance, and the landscape changes from brown to green.

Proving your acquaintance with South Africa. You are now well enough acquainted with South Africa to complete each of the following sentences correctly:

1. South Africa is in the warmest part of the _____ _____ zone.
2. In South Africa winter begins in the month of ____ and summer begins in the month of _____.
3. The eastern coast of South Africa is a moist, subtropical region because _____.
4. The high veld is a temperate grassland because _____.
5. The western part of South Africa is a desert because _____.
6. The southwestern tip of the country has winter rains because _____.

Mineral Wealth

A great mining country. On the map on page 98 find the places in South Africa where diamonds and gold are mined. The wealth of gold and diamonds taken from the mines in this British dominion has made it one of the great mining countries of the world.

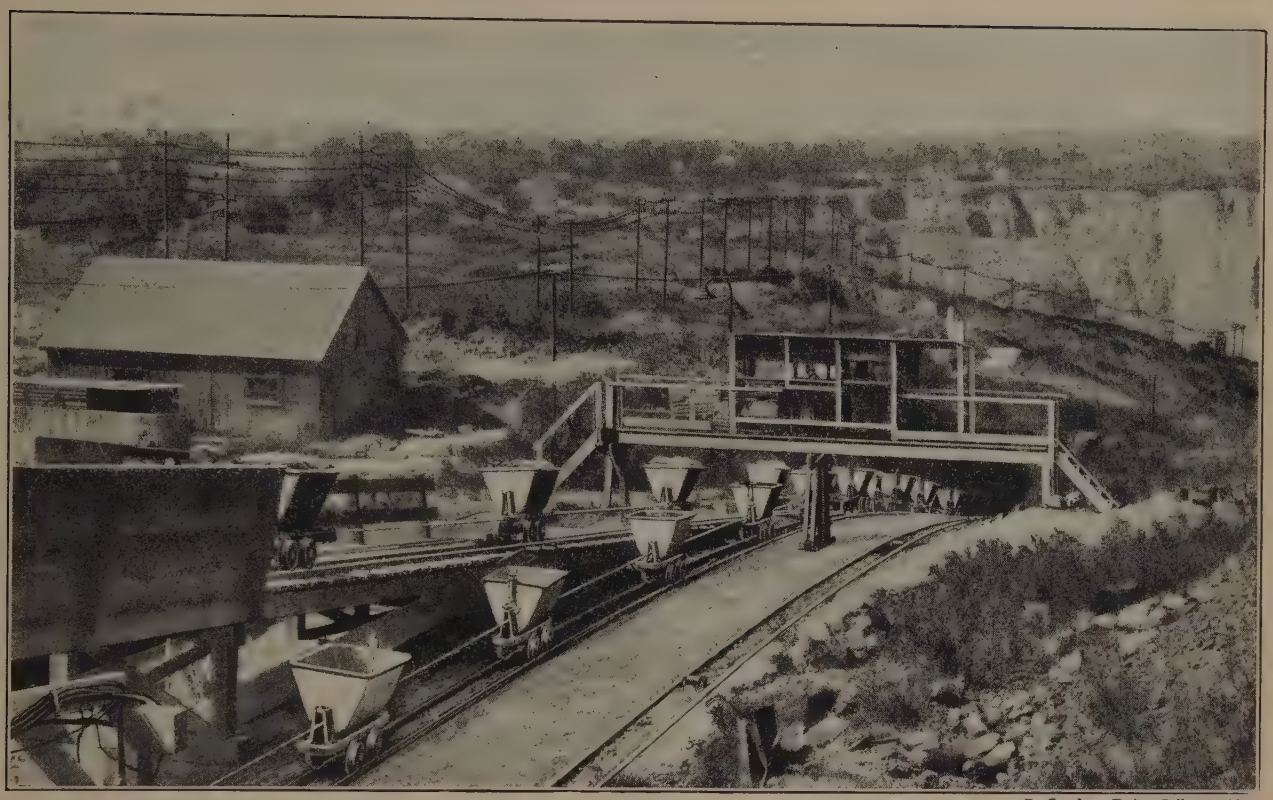
A wonderful discovery. In 1867 a glittering white pebble was found among the playthings of the children of a farmer in the South African veld. A neighbor recognized the stone as a diamond, and it was sold for 500 pounds in English money, or about $2400.

Not long after, someone discovered a place in the veld where the stream gravels contained diamonds. When the discovery became known, thousands of men from all over the world rushed to South Africa and began hunting for the precious stones.

An even greater discovery was made when the miners found the "parent rock" from which the diamonds had been washed by the streams. Today, near the spot where the first diamond mines were located, is the city of Kimberley. Ever since mining began there, South Africa has produced most of the clear, perfect diamonds obtained in the world.

The diamond mines. The diamonds are obtained from rock material mined deep beneath the ground by native workmen. The rock is brought to the surface and spread out on the ground, where it is allowed to lie for a year or more until it decays and crumbles. Then, by washing it, the precious stones are obtained. Most of the rough diamonds are shipped to Europe, where they are cut and polished, and from Europe the polished diamonds are sent to various parts of the world.

The native workmen at the diamond mines are kept in fenced inclosures called *compounds* which are guarded almost like prisons. They are usually engaged for a period of three months, and when they leave they are



De Cou from Ewing Galloway, N.Y.

Figure 95. At the great diamond mine near Pretoria. The cars on the upper track are coming from the mine, loaded with the rock material containing the diamonds. Those on the lower track are "empties" going back into the mine. Huge quantities of rock have to be mined in order to get a few of the precious diamonds.

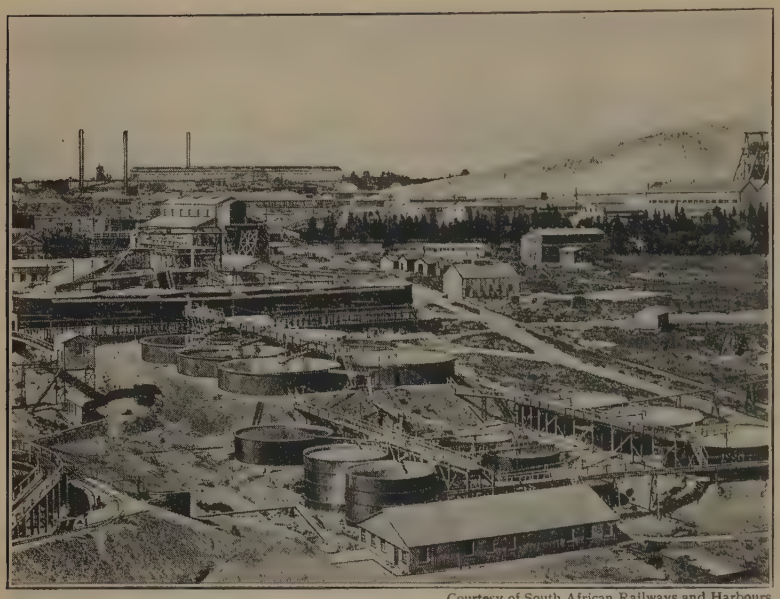
carefully searched to make sure they are not carrying away any diamonds. *See Figure 94.*

There are diamond mines at several other places in the veld besides Kimberley, and the largest single mine is near the city of Pretoria. Find Pretoria and Kimberley on the map on page 98 (*F7*) and study Figure 95.

The gold mines. In 1885 another discovery was made in South Africa, which has meant more to the people than the diamonds. This was the discovery of gold in the high veld near the present city of Johannesburg. That district has become the greatest gold-mining center in the world, and it produces more than half the world's output of gold each year. Valuable as the diamonds are, the gold mined in South Africa is worth three times as much.

The gold comes from deep mines located along a ridge called the "Witwatersrand." This name means a ridge near a stream known as Whitewaters, but the people usually call the gold-mining district simply "the Rand." *See Figure 96.*

Mining and the growth of cities. Since the discovery of diamonds and gold in the high veld, more and more European people have gone to live in that region, and many towns and cities have grown up. Kimberley, as you know, has grown up in the midst of the diamond fields. Pretoria, which is the seat of government of the dominion, has increased its population since the opening of the great diamond mine close by. Johannesburg made its start the year after gold was discovered in the Rand. Today it is the largest city of the Union and the chief railroad center of the high veld.



Courtesy of South African Railways and Harbours

Figure 96. One of the great gold-mining plants near Johannesburg, where the ores are mined and then crushed and treated in various ways to obtain the metal. You can see the mine shaft at the right.

Coal and iron. You already know that coal is mined in the highland region some distance north of Durban, and that some of it is exported. Coal is also mined in the Rand, and is a great help in providing power to run the machinery in the gold mines.

There are large quantities of iron ore in the northeastern part of the country, but as yet the people are not mining it in any large way. In time, however, the abundant supplies of coal and iron ore will probably lead to the growth of an iron-and-steel industry in the Union.

What mining means to the people. Mining is the most important kind of work in South Africa, and it has helped more than anything else to make the people of the Union prosperous. The gold mines and the diamond mines have made many of the white people wealthy, and they provide work for thousands of natives. There are also copper mines in the western part of the Union. Mining also plays a large part in the trade of South Africa, for gold, diamonds, and coal are among the important exports to distant lands.

Farm Lands and Pasture Lands

Crops and live stock. Next to mining, the raising of crops and live stock is the most important kind of work in South Africa. From what you have learned about the climate of the country, do you think more land is used for farming or for grazing? Judging from the exports shown on the map on page 98, which kind of work do you think provides more surplus products,— the raising of crops or the raising of live stock?

The South African corn belt. Corn is the chief food of the millions of native people in South Africa, and it is the principal grain crop of the Union. Most of it is raised in the northern, or warmer, part of the high veld, where the summer temperatures and rainfall are much the same as in the western part of our own corn belt. *See Figure 97.*

Nearly every corn-belt farmer of South Africa keeps cattle, which he pastures on the

Courtesy of South African Railways and Harbours

Figure 97. A field of corn in the high veld of the Union of South Africa. This British dominion produces a considerable surplus of corn and is one of the leading corn-exporting countries of the world.

Photograph by Ewing Galloway, N. Y.

Figure 98. A South African farmer at work in his pineapple field. In what tropical possession of the United States are pineapples an important crop?

wild grasses of the veld and fattens for market on corn. Many of the farmers near the large cities have dairy herds, and some of them cut part of their corn while it is green and use it as ensilage, as dairy farmers in our country do.

Other grain crops. The European people of South Africa prefer wheat flour for their bread, just as we do. The wheat fields of the Union are nearly all in the southwestern region, and the wheat is grown during the season of the winter rains and harvested in the early summer. What do you find among the imports of the Union (map, p. 98) which shows that the South Africans do not grow so much wheat as they need?

In the drier farm lands the farmers raise Kafir corn, just as farmers in the drier parts of our interior plains do. The natives use Kafir corn for food, and much is also used to feed cattle.

Sugar cane and fruit. On the warm, well-watered lowland bordering the eastern coast, especially near Durban, there are sugar plantations and groves of orange, grapefruit, and lemon trees. You will remember that sugar cane needs a warm, moist climate, and that citrus fruits can be grown successfully only where there is little or no danger of frost. Farther north in the lowland, where the temperatures are still warmer, the people raise bananas, pineapples, and other tropical fruits. *See Figure 98.*

On the high veld, where the temperatures are cooler, there are orchards of apples, pears, and other temperate-zone fruits. In southwestern Africa, near Cape Town, the people raise peaches, citrus fruits, and large quantities of grapes. Some of the grapes are raised to be eaten fresh, some to be dried to make raisins and currants, and some to be used in the making of wine. *See Figure 99.*

Fruit is becoming more and more important among the products of South Africa. The people eat large quantities themselves, and each year they are exporting more and more fresh fruit, canned and dried fruits, and fruit jam to Great Britain.

The fresh fruit is exported in ships which have cold-storage compartments for it, and it leaves South Africa in the late summer and early autumn of the Southern Hemisphere. Since the seasons are just opposite in the

From Ewing Galloway, N. Y.

Figure 99. Picking peaches in an orchard near Cape Town. Why is this part of South Africa well suited to fruit crops which are likely to be damaged by frost?

Photograph by Publishers Photo Service, Inc.

Figure 100. Packing grapes for export in a vineyard near Cape Town. The grapes are packed with great care so that they will not be damaged on the long ocean voyage to the British Isles.

Northern Hemisphere, it reaches Great Britain when spring is beginning in that country and before there is any fresh fruit from the home orchards. For this reason fresh fruit from South Africa brings high prices in the British markets. *See Figure 100.*

Handicaps to farming. The people of South Africa do not raise many crops in large enough quantities to have a surplus for export, and even the corn and fruit are of small importance in the export trade compared with the products of the mines and grazing lands. South Africa is not a great farming country, and probably never will be, because so much of it has less than 20 inches of rain.

The plateau region provides millions of acres of land level enough for farming, but only in the eastern part is there rain enough for the growth of crops. In the drier crop lands the farmers use dry-farming methods, but as yet few of them irrigate their fields. Therefore, when there is a long drought, or dry period, their crops wither and die.

Considering the handicaps to farming in a large part of South Africa, you will not be surprised to learn that the raising of live stock is more important than the raising of crops.

Cattle-raising. Altogether, there are about ten million cattle in the Union. As you would expect, the largest numbers graze on the better pastures of the high veld. The early Dutch settlers raised large numbers of cattle for draft, or work, animals, and many of the Boer farmers still use oxen for plowing and other farm work. Today most of the cattle are raised for beef and dairy products; and as you already know, they are fed partly on corn and other forage crops. *See Figure 101.*

Sheep and goats. The number of sheep in South Africa is about four times the number of cattle. Sheep are found in all but the wettest and driest parts of the Union. You will remember that sheep can graze on pastures that are too dry for cattle. They can also graze on the better pasture lands after the cattle have been there, for they can nibble grass that is too short for cattle to get hold of.

Most of the sheep in South Africa are raised for their wool, and huge quantities of wool are exported each year. There are only five great wool-exporting countries in the world, and South Africa is one of them. The others are Australia, Argentina, New Zealand, and Uruguay.

Goats are also raised in large numbers in South Africa, and many of them graze on pastures that are too poor for sheep. The South African veld has more Angora goats and produces more mohair than any other region in the world. Mohair is the long, fleecy hair of Angora goats. *See Figure 102.*

Special credit work. Imagine that you have gone to South Africa and that for a year you have been in the kind of work that interests you most there. Write a letter to a friend at home, asking him to go into business with you. Tell him just where you are, what kind of work you are doing, and why you think he would like South Africa.

Courtesy of South African Railways and Harbours

Figure 101. Cattle grazing on a ranch in the South African veld. The cattle raised in the Union provide large quantities of hides for export.

Manufacturing and Trade

Advantages for manufacturing. As yet South Africa is not a manufacturing country of any importance, but in recent years the number of industries has been increasing. There is plenty of coal, and the population is growing larger each year, providing greater markets for manufactured goods. What raw materials produced in the Union might be used to build up manufacturing industries?

Exports and imports. From the map on page 98 name the principal exports of South Africa. What two kinds of work in the Union provide a surplus of products for export? To what two classes of goods do the leading imports belong?

The map shows that raw materials from the mines and pasture lands are by far the most important exports. The imports are largely manufactured goods and the kinds of foodstuffs that the people cannot produce in sufficient quantities to supply their needs.

Nearly two thirds of all the exports of South Africa go to Great Britain, and nearly half of all the imports come from there. What reasons can you give for this large trade between the dominion and the home country?

There is a smaller amount of trade of the same kind between South Africa and some of the industrial countries on the continent of Europe. Our own country buys some of South Africa's raw materials, and we help to supply the people of the Union with many kinds of manufactured goods, especially automobiles. We also supply them with much of their gasoline and other mineral oils.

Southwest Africa

A former German colony. On the map on page 98 find Southwest Africa (*E7*). This part of Africa was once a German colony, but after the close of the World War, in 1918, the League of Nations placed its government in the hands of the people of the Union of South Africa. If you do not know what the League of Nations is, appoint a committee to find out and report to the class.

Figure 90 on page 97 will show you that Southwest Africa is thinly populated, and Figure 89 will show you why. Explain the reason. Most of the people are natives, but there are a few Europeans who are interested in mining or in raising live stock. Copper and lead are mined in the northeast, and diamonds are found along the coast in the south.

Courtesy of South African Railways and Harbours

Figure 102. Angora goats in South Africa. The first goats of this kind in the Union were brought from the Plateau of Anatolia in southwestern Asia.

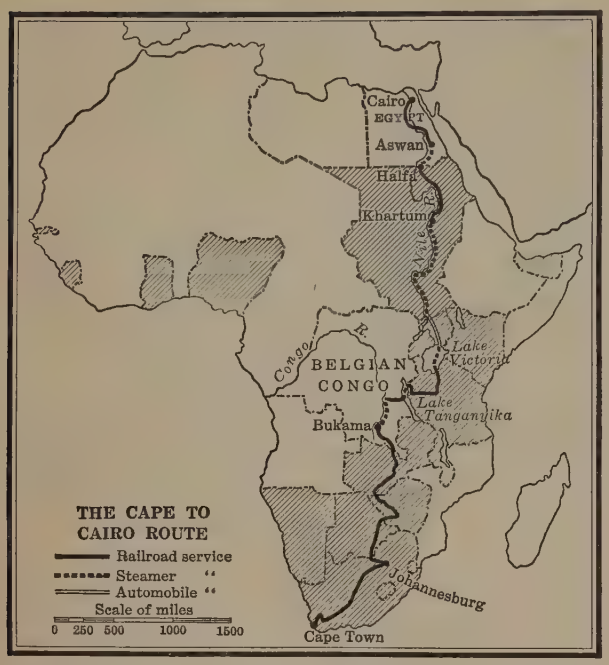


Figure 103. The transcontinental route of travel from Cape Town to Cairo. The shaded areas on the map are the British lands in Africa.

A combination test. This test is a combination of making choices and giving reasons. In each sentence you are to choose the correct word or phrase from those in parentheses and then complete the sentence by giving the reason for the fact which it states.

1. South Africa is not a great (mining) (grazing) (farming) country because _____.
2. The high veld is a (desert) (grassland) (temperate forest) because _____.
3. The most important work in the high veld is (mining) (farming) (lumbering) because _____.
4. The eastern coastal lowland has (too little) (plenty of) (too much) rain for farming because _____.
5. The southwestern corner of Africa is suited to the growth of (winter wheat) (corn) (sugar cane) because _____.
6. South Africa is a great (cotton-growing) (wool-producing) (manufacturing) country because _____.
7. Most of the trade of South Africa is with (the United States) (India) (Great Britain) because _____.

3. British Lands in Tropical Africa

The map on pages 90–91 shows that there is an unbroken line of British lands in Africa extending from the Union of South Africa northward to the independent country of Egypt. Name these British lands in order from south to north. In what zone are they? Which one of them borders the Red Sea? What tropical lands bordering the west coast of Africa belong to the British? What British possession is located east of Ethiopia?

Can you suggest reasons why these tropical lands in Africa are of value to the British people? Keep this question in mind as you read about these lands.

Map work. As you study the tropical possessions of the British in Africa, color them pink on the map of the British Empire which you are making.

The Cape to Cairo Route

A transcontinental route of travel. On the map on page 98 find Cairo, the capital of Egypt (*G1*). From Cape Town we can travel overland to Cairo by what is known as the Cape to Cairo route. It is a long, slow journey, partly by railway, partly by river steamer and lake boat, and partly by road, and it will take us six or seven weeks. Trace the Cape to Cairo route on Figure 103 and show where travel is by railroad, by river steamer on the Congo and the Nile, by lake boat, and by automobile. Notice how much of this transcontinental route passes through British lands. What lands does it pass through which do not belong to the British?

The Cape to Cairo Railway. The British people began to plan the Cape to Cairo Railway many years ago. Figure 103 shows that the southern section of the railway has been completed from Cape Town to Bukama, on the Congo River in Belgian Congo, and the northern section from Khartum to Halfa in Anglo-Egyptian Sudan and from Aswan to Cairo in Egypt. River boats now carry pas-

sengers between Aswan and Halfa, but it is probable that this missing link in the railway will soon be built.

Between the northern and southern sections of the Cape to Cairo Railway much railroad-building remains to be done, and it will probably be many years before the work is completed. When that time comes, the transcontinental journey between Cape Town and Cairo will take much less time than it does today. Can you explain why? How will the British possessions in Africa benefit by the completion of the railway?

Courtesy of Joseph T. Singewald, Jr.

Figure 104. A rest camp for people traveling by automobile on the section of the Cape to Cairo route between Lake Victoria and the Nile River. The shelters where people may rest and sleep are built somewhat like the native houses in this part of Africa.

Southern Rhodesia and Northern Rhodesia

The opening-up of Rhodesia. As the British people became interested in developing the resources of South Africa, some of them moved farther north across the Limpopo River and then across the Zambezi River. Find these rivers on the map on page 98.

Among the men who were most interested in this northward movement was Cecil Rhodes. He became a great leader in South Africa, and he did more than anyone else to open up the region north of the Limpopo for British settlement. In time this part of Africa was named Rhodesia in his honor. Rhodesia is now divided into two colonies: Southern Rhodesia and Northern Rhodesia.

From South Africa to Rhodesia. If we travel northward by train from South Africa to Rhodesia, we shall pass through the eastern part of the British protectorate of Bechuanaland. This great stretch of plateau country includes most of the Kalahari Desert; and as you might expect, it is thinly populated. Most of the people are natives, who raise cattle, sheep, and goats. The few Europeans live in the east, near the railroad.

Southern Rhodesia. All Southern Rhodesia lies in the plateau region of southern Africa, in the belt of the southeast trade winds. The greater part of the plateau is over 4000 feet above sea level, but it slopes down to the Limpopo River on the southeast and to the Zambezi River on the northwest.

Although Southern Rhodesia is wholly within the tropics, the greater part of the country has a subtropical climate and is healthful for white people. That is because so much of the plateau is over 4000 feet in elevation.

The rainfall varies from 35 inches in the east to 15 inches in the west, which is enough for the abundant growth of grass in all parts of the country, and some forest growth in the east. Explain why the rainfall grows less from east to west. Southern Rhodesia does not extend far enough west to have any desert lands.

Some wonderful falls. On the map on page 96 find the Victoria Falls in the Zambezi River (*F6*). These falls were discovered by David Livingstone. They are more wonderful than our own Niagara Falls, and thousands of tourists visit them each year. *See Figure 105.*

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Figure 105. Victoria Falls. These falls are a mile wide and 360 feet high — more than twice as high as Niagara Falls. Just below the falls the railroad from Cape Town to Bukama crosses the gorge of the Zambezi on a wonderful steel bridge 400 feet above the river.

The people of Rhodesia are planning to use part of the water power at the Victoria Falls to make electricity, just as the people of our country and Canada use part of the water power at Niagara. In what ways will this use of the falls help the people of Rhodesia?

A cattle-and-corn country. Like the high veld in South Africa, Southern Rhodesia is a cattle-and-corn country. It is not, however, a good sheep country, for sheep need a cooler climate to be healthy and to produce thick wool. Cattle-raising is the most important work of the Europeans in Southern Rhodesia and also of the natives. Corn is the most important crop because it is the chief food of the natives and because it is used to fatten cattle and pigs.

Some products of the earth. Turn to the map on page 98 and name the chief mineral products of Southern Rhodesia. This country leads the world in the production of chromite ores, and ranks next to Canada in the production of asbestos. Chromite ores contain a rare mineral called chromium, which is used with iron to make certain very hard kinds of steel. Asbestos, you will remember, is a mineral made up of fine, silky fibers which will not burn and which can be woven into cloth. You may have seen asbestos mats or asbestos packing around steam pipes. What other uses of asbestos can you name?

Of even greater importance than the chromite and the asbestos is the gold which is mined in Southern Rhodesia, and which is by far the most valuable export of the colony.

Trade with distant lands. Since Southern Rhodesia has no seacoast, all its trade with distant lands must be carried on through the ports of neighboring countries with which it is connected by railroads. Some of its trade passes through Cape Town, but much more passes through the port of Beira in the Portuguese colony of Mozambique.

Turn to the map on page 98 and compare the length of the railroad route from Salisbury, the capital of Southern Rhodesia, to Beira with the length of the route to Cape Town. Then explain why the Rhodesians export and import more goods through the Portuguese port than through the British port.

A country which could support more people. Southern Rhodesia is not a densely populated country, and less than one twentieth of the people are Europeans. The Europeans are by no means all British, for many are descendants of Dutch settlers, and others of German and of French settlers. Many more white people could make a living in Southern Rhodesia, for the country is larger than our state of Montana, and there are still large stretches of good land that are not in use. The greatest need is for more roads and railroads to open up more of the land for settlement.

Northern Rhodesia. Northern Rhodesia is a country much like Southern Rhodesia, except that it is somewhat warmer because it is nearer the equator. The southern part is well suited to cattle-raising, and it is believed to have much mineral wealth. At present, however, it is but little developed. The number of Europeans is much smaller than in Southern Rhodesia, and therefore there are fewer ranches, farms, and mines. Turn to the map on page 98 and tell what metal ores are being mined in the colony.

Something to discuss. Discuss the British development of South Africa, Southern Rhodesia, and Northern Rhodesia with your classmates, and try to decide why the greatest progress has been made in South Africa and the least in Northern Rhodesia.

British Lands in East Africa

Lands of the Lake Plateau. On the map on page 98 find Uganda, Kenya, Tanganyika, and Nyasaland. These are the British lands of East Africa. Except for the narrow coastal lowland of eastern Kenya and Tanganyika they are in the plateau of East Africa.

This region of Africa is sometimes called the Plateau of the Great Lakes, or the Lake Plateau. The map on page 98 will show you why. First find Lake Victoria (*G5*). Then find the chain of long, narrow lakes beginning with Lake Albert, northwest of Lake Victoria, and extending in a curve to Lake Nyasa (*G6*). You can see these lakes still more clearly on the relief map on page 94.

The long, narrow lakes lie in a deep trough called the "rift valley of Africa," and they are among the most beautiful lakes in the world. As you already know, Lake Tanganyika serves as part of the Cape to Cairo route of travel. Lake Victoria is not one of the rift-valley lakes, but it serves in the same way.

The coastal lowland. The coastal lowland of Kenya and Tanganyika is hot and rainy and covered with tropical forests. Its hot, moist climate is unhealthful for white people, and few of them live there. Many of the natives gather coconuts from the coconut palms that grow on the lowland and dry the "meat" to make copra for export, just as the natives of the Philippine Islands do. Others work on plantations where sisal hemp is grown for export. *See Figure 106.*

By Cowling from Ewing Galloway, N. Y.

Figure 106. Natives of East Africa hanging sisal fiber on lines to dry. What country of the Americas produces large quantities of sisal hemp for export?

The plateau lands. Since the plateau lands of East Africa are much higher than the coastal lowland, their climate is much better for white people. They receive less rain than the coastal lowland, and are chiefly grasslands. In the midst of the plateau there is a group of old volcanic mountains which tower above the surrounding lands. Among them is Mount Kilimanjaro, the highest mountain in Africa. Although it is near the equator, its peak is always covered with snow. Why?

Work in the plateau. Many of the natives of the plateau raise cattle, and both the natives and the Europeans raise corn. On many of the native farms and also on plantations owned by white people coffee is grown for export. The leading export crop, however, is cotton, which is raised chiefly by the natives,

Courtesy of Canadian Pacific Steamships

Figure 107. The main street in Zanzibar. Why are the signs printed in English? What suggestions of the tropical climate do you find in the picture?

especially in Uganda. Cotton-growing is being encouraged by the British and is becoming more important each year. Much of the crop is shipped to England. Give a reason for this.

East African ports and their trade. On the map on page 98 find the island of Zanzibar (*G5*). This little tropical island is a British protectorate, and on it is a seaport of the same name. Zanzibar is a great trading center, and one of the chief ports of East Africa. In the harbor you will see ships from many distant lands, and on the streets you will meet merchants from many different countries. *See Figure 107.*

Zanzibar and the neighboring island of Pemba produce most of the world's cloves. Cloves are the dried unopened flower buds of a certain kind of tropical tree.

Other important ports of East Africa are Mombasa, in Kenya, and Dar es Salaam, in Tanganyika. At those ports and at Zanzibar you will see ships unloading manufactured goods and taking on products of the East African farms and plantations. Most of the trade is with Great Britain and India. What East African product do you think the British want the most? Why?

British Lands in the Northeast

Map studies. Before you read further, use the map on page 98 to work out the following map studies.

1. On the map find Anglo-Egyptian Sudan and British Somaliland. 2. What bodies of water border these British lands? 3. What large river flows northward through Anglo-Egyptian Sudan? 4. Judging from this map, what do you think are the most important kinds of work in Anglo-Egyptian Sudan? 5. What do the people raise that might be sold in Lancashire, England?

6. What canal connects the northern end of the Red Sea with the western end of the Mediterranean? 7. Turn to the map on pages 386–387 and decide whether this canal is important to the British people in carrying on trade with Australia, New Zealand, and the parts of the empire in Asia and eastern Africa.

The Suez Canal. The Suez Canal, which you have located on the map, is about 100 miles long, and it has no locks because it was cut through very low land. It was opened in 1869, and is of great commercial importance because it provides a water route from western Europe to eastern Africa, Asia, and Australia several thousand miles shorter than the route around the southern tip of Africa. The canal is in Egypt, but it is controlled by the British and guarded by British troops. Can you think of reasons why it is of special advantage to Great Britain to control this very important waterway for ships?

The British allow the ships of all nations to pass through the Suez Canal in times of peace, just as our country allows the ships of all nations to use the Panama Canal. The ships pay certain charges for going through, and the money is used to keep the canal in good condition. *See Figure 108.*

British Somaliland. This part of Africa is a very dry land with few people, but there is an advantage to the British people in holding it. It lies opposite Aden, one of the

Figure 108. The northern entrance to the Suez Canal at Port Said, in Egypt. More than half of all the ships which pass through this canal each year are British. Can you explain why?

British possessions in southwestern Asia, and its position helps the British to control the southern entrance to the Red Sea.

Anglo-Egyptian Sudan. As you may guess from its name, the southern portion of this country lies in the part of Africa known as the Sudan, where there is enough rain for the growth of grass. The northern portion is part of the Sahara Desert.

Figure 90 on page 97 shows that most of the people of this British land live in a belt bordering both sides of the Nile River. Turn to the map on page 98 and find Khartum (*G3*). Notice that it is located at the junction of the two main branches of the Nile. The Blue Nile comes from the well-watered Ethiopian Highlands, and the White Nile rises in a rainy part of Africa near the equator. Both branches provide abundant water for irrigation along their banks. You will learn more about the use of the Nile for irrigation when you visit Egypt.

The people of Anglo-Egyptian Sudan raise much cotton on their irrigated lands, and cotton is the chief export. The fiber is separated from the seeds in gins imported from England, and is sent by train to Port Sudan, on the Red Sea, for shipment to Liverpool.

The people raise also large quantities of a grain called millet, and various other food crops. In the southern grasslands many of the natives raise cattle, sheep, and goats and prepare the hides and skins for export to Europe. Wild elephants roam the southern grasslands and are hunted by the natives, who eat the meat and sell the ivory tusks to traders for export.

With its irrigated lands for farming and its large areas of grasslands for the raising of stock, Anglo-Egyptian Sudan can produce much greater quantities of raw materials and foodstuffs than it does today, and many people believe that as more Europeans go to make their homes there it will become one of the most important countries of Africa.

By Cowling from Ewing Galloway, N.Y.

Figure 109. River steamers at Khartum. How can you tell from the map on page 98 that these boats must have come from the south? Why is Khartum one of the more important ports on the Nile?

From Ewing Galloway, N.Y.

Figure 110. Boats loaded with cacao for export from the Gold Coast. The harbors are so shallow that ocean ships anchor off shore, and cargoes are carried to and from them in small boats of this kind.

Khartum is the capital of the country and has the largest European population of any of the towns and cities. Omdurman, just across the Nile from Khartum, is the old native capital and has the largest native population. *See Figure 109.*

The West Coast Possessions

Locating the British lands in West Africa. On the map on page 98 find Gambia (*B3*), Sierra Leone (*B4*), Gold Coast and Ashanti (*C4*), and Nigeria (*D4*). Which of these British possessions in West Africa is the largest?

The tropical coast. The west coast of Africa, from Gambia to the mouth of the Congo River, is one of the hottest and rainiest parts of the continent. From Figure 89 on page 97 tell how much rain falls along the coast of the Gulf of Guinea. Because of the heat and moisture the climate is very unhealthful for white people, and the few white people who live on the coastal lowlands are mostly traders.

The natives carry on farming in a simple way to supply themselves with food, and some of them raise cacao for export. You will remember that we visited cacao plantations in tropical South America and learned how the people remove the "beans" from the seed pods and prepare them for export.

The natives also gather the fruit of the oil palms which grow wild in the tropical forests of this hot, rainy coast. The pulp and the kernels, or seeds, of this fruit provide palm oil, which is used in large quantities in Europe and the United States for making soap and for other purposes. Both the kernels and the oil are exported from West Africa.

The savannas. Farther inland, where the land is higher and the rainfall less, the forests give way to the savannas of the Sudan. The northern half of Ashanti and the greater part of Nigeria are in the Sudan. The natives of these tropical grasslands carry on farming and raise many cattle. Their principal export crop is peanuts, which are sent to Great Britain and other European countries for use in making vegetable oil.

In Nigeria the natives have long raised cotton and woven coarse cotton cloth for clothing. The British government is encouraging them to raise more and better cotton, and small quantities of this raw material are now being exported to England. Another important product of Nigeria is tin. The mines are under the control of the government, and the ore is exported to Wales.

West African trade. About three fourths of all the trade of the British possessions in West Africa is with the home country. In exchange for cacao, palm kernels, peanuts, tin, and other products which they get from these possessions the British send cheap cotton goods for clothing for the natives, machinery and small tools, and a few other kinds of manufactured goods. *See Figure 110.*

Special credit work. Find out who built the Suez Canal and why it was easier to build than the Panama Canal.

A check. Turn to Figure 103 on page 108 and see if you can name correctly all the British possessions in Africa. If you have any trouble doing so, you need to study the map on pages 90–91 again.

An identification test. After your study of the British lands in Africa you should be able to tell what each phrase below describes.

1. The cape at the southern tip of Africa.
2. The city which is the greatest gold-mining center in the world.
3. The highest mountain in Africa.
4. The canal in Egypt controlled by the British.
5. The city which is the center of the oldest diamond-mining district of Africa.
6. The falls in Africa which are greater than Niagara.
7. The river in which these falls are located.
8. The capital of Anglo-Egyptian Sudan.
9. The transcontinental route of travel from northern Africa to southern Africa.
10. Two lakes which serve as part of this transcontinental route.
11. The great desert in northern Africa.
12. The people of Dutch descent in South Africa.
13. The river which forms part of the northern section of the Cape to Cairo route.
14. The tropical grassland south of the Sahara Desert.
15. The river which forms part of the central section of the Cape to Cairo route.
16. The interior plateau of South Africa.

Finding reminders. Tell where a person from each of the following places in the Americas would find a place in the British lands in Africa to remind him of home.

1. The corn belt of the United States.
2. A sheep ranch in Argentina.
3. A gold-mining center in Colorado.
4. The cotton belt of the United States.
5. A coffee plantation in Brazil.
6. A tin-mining camp in Bolivia.
7. A cacao plantation in Ecuador.
8. A sisal-hemp plantation in Yucatan.

Giving reasons. Complete each sentence below by giving reasons for the fact which it states.

1. Of all the British possessions in Africa the Union of South Africa is the one which has attracted the most white people because _____.
2. In time Anglo-Egyptian Sudan will probably be of much greater value to the British than it is today because _____.
3. The British are encouraging cotton-growing in Uganda, Anglo-Egyptian Sudan, and Nigeria because _____.
4. The British are interested in mining the tin of Nigeria because _____.
5. The greater part of the wool exported from South Africa goes to England because _____.
6. Fresh fruit from South Africa finds ready markets in Great Britain because _____.
7. Although the British possessions in East Africa are within the tropics, they are fairly well suited to settlement by white people because _____.
8. Although British Somaliland is thinly populated, it is of value to the British people because _____.
9. The British possessions in Africa provide good markets for British manufactures because _____.

Getting cargoes. Name one or more ports of the British lands in Africa where a British ship might go to get each of the following products. You may use the map on page 98 for this work if you find it necessary.

tin	coffee
coal	mohair
wool	sisal hemp
cloves	palm kernels
cotton	hides and skins
cacao	gold and diamonds

Special credit work. 1. Find a book which tells about Cecil Rhodes and his work in South Africa, and make a report to your class.

2. Find out what the Rhodes scholarships are and what a boy must do to win one.

Water less than 500 ft. deep
Land below sea level
Floating ice
Tundra
Wet-weather streams
Grasslands and cultivated areas
Temperate forests
Tropical forests
Oases
Semideserts, deserts, and barren mountain slopes
ASIA
Scale of miles
0 200 400 600 800 1000 1200 1400
Wm. T. Oliver

IV. BRITISH LANDS IN ASIA

Foreword. Nearly half of all the people in the world live in Asia, and of all the people in that great continent about one third live in India and other lands which are parts of the British Empire. The natives of these British lands are not people of the black race, like the negroes of Africa. Most of them are brown-skinned people, but the various groups differ from one another in race, religion, and customs.

The British have done much to help the native people of these Asiatic lands. They have made living conditions more healthful for them, and they have taught them better ways of farming and doing other kinds of work. They have also built roads and railroads, improved the harbors, and developed foreign trade, giving the natives a better chance to market their surplus products in distant lands.

As you read this chapter, try to find out why the British became interested in the lands of Asia, and why these lands are valuable parts of the British Empire.

1. A Voyage to India

We are going to board a steamship at London and travel by way of the Suez Canal to India. This is the route most commonly followed by ships going from western Europe to seaports of Asia, Australia, and New Zealand. Trace it on the map on pages 90–91. Point to the places along this important trade route where we may expect to see British flags flying.

Courtesy of Canadian Pacific Steamships

Figure 111. The Rock of Gibraltar, as it looks from ships passing eastward through the strait. The port of Gibraltar, on the lower land back of the Rock, is an important coaling station for ships.

Getting acquainted with Asia. Before you visit the British lands in Asia, you will find it helpful to get somewhat better acquainted with the continent as a whole. First study the colored relief map opposite this page. Find (1) the parts of Asia which have too little rain for farming; (2) the parts where there are extensive grasslands and cultivated areas; (3) the part with the greatest stretches of temperate forests; (4) the cold, frozen part known as the *tundra*.

Now work out the map studies on page 119.

Map work. After you have finished the map studies, color the British lands in Asia pink on the map of the British Empire which you are making. Use the map on pages 90–91 as a help.

Gibraltar. We enter the Mediterranean Sea through the Strait of Gibraltar, which is about 8 miles wide at its narrowest point. What two continents are separated by this narrow strait? What European country lies on the northern side of the strait?

On the north, which is to our left as we pass eastward through the strait, is the Rock of Gibraltar, shown in Figure 111. There we see British flags, which tell us that the Rock of Gibraltar belongs to Great Britain, instead of to Spain, as we might easily suppose. This huge rock has been made into a fortress which gives the British control of the western gateway to the Mediterranean.

Turn over to page 120.

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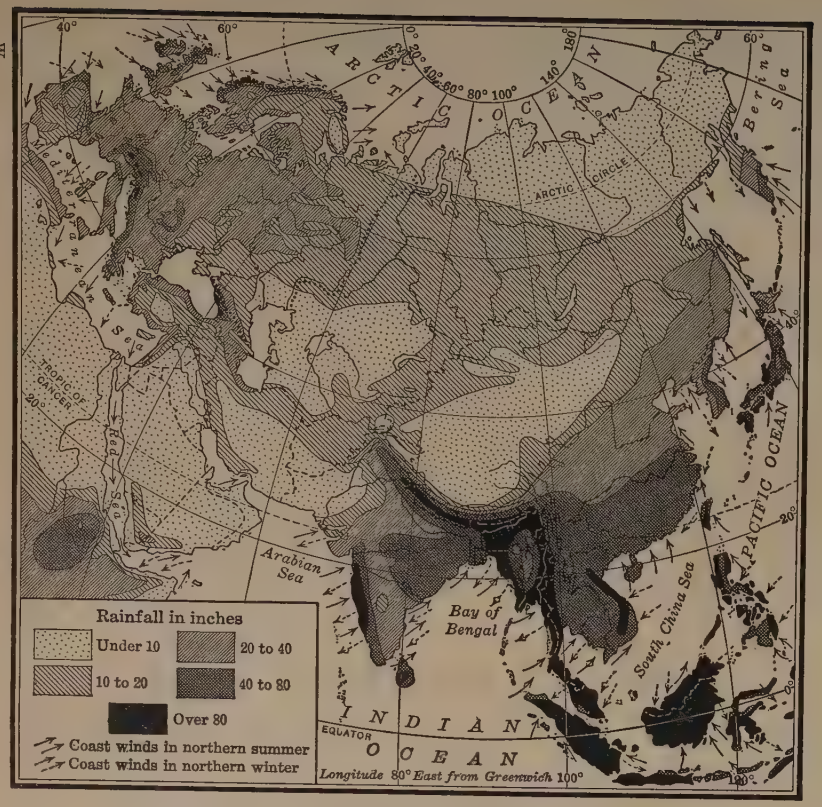

Figure 112. Distribution of rainfall in Eurasia.

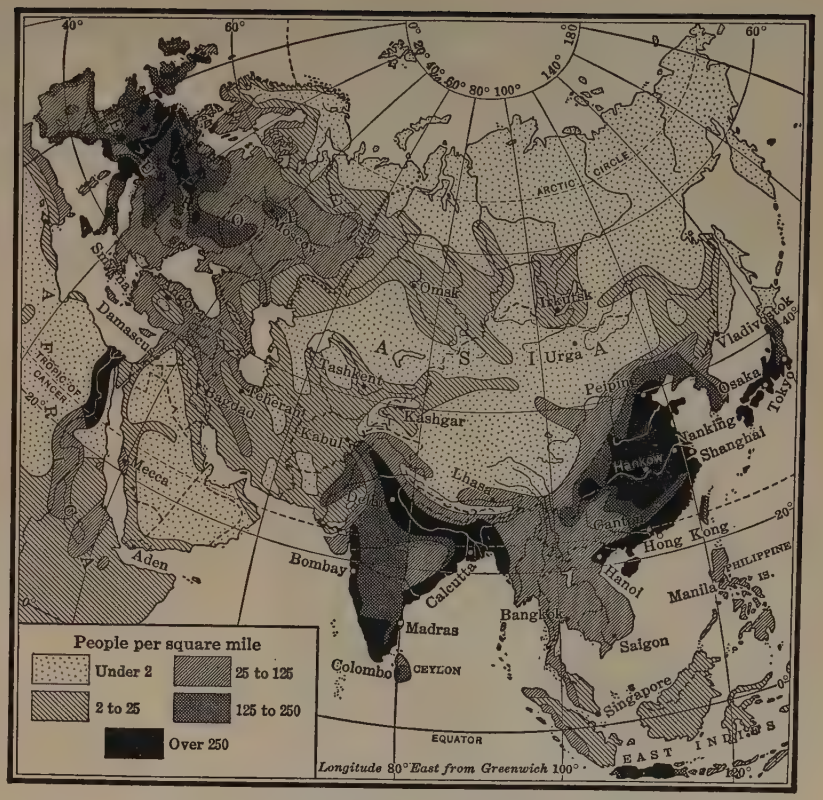

Figure 113. Distribution of people in Eurasia.

MAP STUDIES

1. What mountain ranges, river, and inland sea form the natural boundary between Europe and Asia? 2. What plains lie east of the Ural Mountains? 3. In what direction do the rivers of those plains flow? 4. What lowland lies east of the Caspian Sea? 5. How do these Asiatic plains compare in density of population with the Central Plains of Europe? 6. What reason for this difference does Figure 112 suggest?

7. Find the plateaus of Arabia, Iran, and India on the physical map and on the rainfall map. 8. Which of these plateaus do you expect to find densely populated? Why? Check your answer by Figure 113. 9. On the physical map find the Indus and Ganges rivers in India and name the mountains in which they rise. These are the highest mountains in the world. What kind of mountains are they? 10. Name the highest peak in the Himalayas and give its elevation.

11. Describe the surface of the part of Asia which stretches northeastward from the Himalaya Mountains to Bering Sea. 12. Give two reasons why this part of Asia is thinly populated. 13. What part of eastern Asia is as densely populated as India? 14. What reason can you give for the many people there? 15. Is Asia mostly a continent of lowland plains or of mountains and plateaus? 16. Do most of the people live in the cooler part of the continent or the warmer part?

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Figure 114. Part of Jerusalem. The domed building is a Mohammedan mosque, or church. The buildings in Jerusalem are made of sun-dried mud bricks and stone instead of wood. Can you explain why?

Malta. Sailing eastward, we come to the narrowest part of the Mediterranean Sea, between the island of Sicily and the coast of northern Africa. Here we pass the island of Malta, which is the most important port of call for ships passing back and forth through the Mediterranean. If we stop at Malta, we shall see British flags flying from the public buildings, showing that this little island is another British possession. As you might expect, it is a coaling and repair station for ships.

Cyprus. To the north of our route, near the eastern end of the Mediterranean Sea, is the island of Cyprus, which has been governed by the British since 1878. The people are mostly farmers, and before the island came under British control their crops were often badly damaged by droughts. The British have helped the people by building irrigation works.

The British in the Near East

A stop at Haifa. Our next stop is at Haifa, a seaport on the coast of Palestine, at the eastern end of the Mediterranean Sea. Here a number of British officials leave the ship. They have been sent out from London to help in the government of Palestine and Trans-Jordan. These two countries are in southwestern Asia, which is the part of the world known as the "Near East." Find Palestine and Trans-Jordan on the map on page 123 (*B–C4*).

Palestine. Palestine is the old homeland of the Jews, where Jesus lived and carried on his great work as a religious teacher. For that reason it is called the "Holy Land." For hundreds of years before the World War Palestine belonged to Turkey. At the end of the war the League of Nations placed the government in the hands of the British, and there is a plan to make Palestine a new homeland for the Jews. At present the population is made up partly of Jews, but more largely of Arabs.

Turn to Figure 112 on page 119 and study the rainfall of the lands bordering the eastern end of the Mediterranean Sea. Notice that there is a narrow belt along the coast where the yearly rainfall is over 20 inches. This belt is a coastal plain. Farther inland the land grows hilly and mountainous, and the rainfall grows less.

Most of the people of Palestine are farmers. Their chief crops are wheat, barley, and olives and other fruits. You will remember that wheat and barley need less moisture than most grains. Olive trees also can be grown where the rainfall is rather light. The rougher and drier parts of Palestine are better suited to grazing than to farming, and for this reason the raising of sheep and goats has always been important.

The old city of Jerusalem was the Jewish capital in the days of Jesus, and it is still the capital of Palestine. Thousands of tourists visit Jerusalem and other parts of the Holy Land each year. *See Figure 114.*

Courtesy of Board of Foreign Missions, R. C. A.

Figure 115. A bridge across the Tigris River at Bagdad. Bagdad is a meeting place of transportation routes. River boats come upstream from Basra, camel caravans come in from the bordering deserts, and trains come from Basra and from places farther north in Irak. Bagdad is also connected by motor roads with Damascus, in Syria, and with Teheran, in Persia. Find Damascus (*C 4*) and Teheran (*F 3*) on the map (p. 123).

The rift valley. Along the eastern margin of Palestine are the Sea of Galilee, the Jordan River, and the Dead Sea. These bodies of water lie in a deep, narrow trough somewhat like the rift valley of East Africa. The trough is so deep that the surface of the Dead Sea is 1292 feet below the level of the Mediterranean. The Dead Sea has no outlet, and so its waters are salt like those of Great Salt Lake.

Trans-Jordan. Trans-Jordan is an Arab country with a king of its own, but as yet its government is not strong. For this reason the League of Nations has given the British official in charge of Palestine authority over Trans-Jordan as well. Trans-Jordan is part of the desert plateau of Arabia. The people are Bedouin Arabs like those whom you visited when you were studying "Home Life in Faraway Lands," and they live a wandering life with their camels, sheep, and goats.

Irak. On the map on page 123 find the country of Irak (*D–E4*). Notice that it includes most of the lowland bordering the Tigris and Euphrates rivers. This lowland is called Mesopotamia, which means "the land between the rivers," and its soils are deep and fertile. The region has little rain, but the rivers provide water for irrigating crops.

Like Trans-Jordan, Irak is an Arab kingdom, but the League of Nations has placed it under the protection of Great Britain. One of the crops which the people raise is cotton. The British are encouraging them to raise more cotton by helping them to get good seed and to market the crop. Can you think why this particular crop is of special interest to the British?

Another and more important reason for British interest in Irak is that it has very valuable oil fields. British oil companies are drilling wells and building pipe lines and refineries. What did you learn about Great Britain which explains why the British are especially interested in the production of oil in Irak?

The capital of Irak is the old city of Bagdad, which has been a trading center for thousands of years. The chief port is Basra, which is located at the point where the Tigris and Euphrates rivers join to enter the Persian Gulf. Find these two cities on the map on page 123 (*D–E4*), and study Figure 115.

U. S. Department of Commerce

Figure 116. Warehouses along the water front at Aden. Aden is a center where coffee, hides, and skins from neighboring parts of Arabia and Africa are collected for export, and from which cotton goods from Great Britain are distributed to those lands. Notice the camel in the picture. Why is it that camels are often seen at Aden?

Through the Suez Canal. Leaving Haifa, our ship heads directly toward the northern entrance to the Suez Canal. We stop at Port Said, where we see British flags flying, and then steam southward through the canal. There is little to see on this trip except the bare, sandy desert through which the canal has been cut. We stop again at the British port of Suez, at the southern end of the canal, and then pass out into the Red Sea.

Aden. At the southern end of the Red Sea we pass through the narrow Strait of Bab-el-Mandeb and head toward the port of Aden. There we stop for some hours to take on coal and to unload some cotton goods.

On the map on page 123 find Aden and its port of the same name (*D–E8*). This area at the southwest corner of the peninsula of Arabia belongs to the British and is a valuable possession because it gives them control of the southern entrance to the Red Sea. The port of Aden serves as a coaling station for ships and as a trading center for the people of southern Arabia and the people of Somaliland on the neighboring coast of Africa. *See Figure 116.*

Across the Arabian Sea. From Aden we sail across the Arabian Sea to Bombay, on the western coast of India. The trip from London has taken about three weeks. If we had traveled around the southern tip of Africa instead of through the Suez Canal, it would have taken us several weeks longer.

Something to discuss. Discuss with your class the value of Gibraltar, Malta, Port Said, Suez, and Aden to Great Britain. Try to decide why it is worth while to the British to hold them.

In connection with this discussion you will find it helpful to answer the following questions:

1. Why do the British, more than most nations, need coaling and repair stations for ships along the great water highways of the world?
2. Why is the route between western Europe and Asia by way of the Suez Canal especially important to the British people?
3. How might British trade and shipping suffer if the Strait of Gibraltar, the Suez Canal, and the Strait of Bab-el-Mandeb were controlled by nations which were unfriendly to Great Britain?
4. How does Great Britain help other countries of the world by keeping the Suez route open for the ships of all nations?

THE NEAR EAST AND INDIA
POLITICAL AND ECONOMIC MAP
Scale of statute miles
0 100 200 400 600 800
Land below sea level
Lowlands and interior plains
Uplands and plateaus
Old, worn-down mountains
Young, rugged mountains
☆ Capitals of countries
⊙ Capitals of minor divisions
Navigable rivers
Chief seaports
Principal railroads
UNION OF SOVIET SOCIALIST REPUBLICS
TURKEY
PERSIA
AFGHANISTAN
Kabul
ARABIAN SEA
BAY OF BENGAL
INDIAN OCEAN
CEYLON
Delhi
Bombay
Calcutta
Madras
Karachi
Baghdad
Teheran
Mecca
Medina
Riyadh
Aden
Addis Ababa
Constantinople
Angora
Smyrna
Beirut
Damascus
Jerusalem
Cairo
Suez Canal
Port Said
Alexandria
Tashkent
Samarkand
Bokhara
Ashkhabad
Merv
Tabriz
Resht
Mosul
Aleppo
Isfahan
Kerman
Shiraz
Basra
Kuwait
Persian Gulf
Gulf of Oman
Maskat
Quetta
Kalat
BALUCHISTAN
Kandahar
Herat
Khyber Pass
Peshawar
Srinagar
Amritsar
Lahore
Simla
Kashgar
Yarkand
Khotan
Aksu
Kulja
Tihwa
Turfan
Lhasa
Darjeeling
Patna
Lucknow
Agra
Cawnpore
Allahabad
Benares
Chandernagore (Fr.)
Calcutta
Delta of the Ganges
Ahmadabad
Baroda
Surat
Nagpur
Poona
Hyderabad
Yanaon (Fr.)
Goa (Port.)
Bangalore
Mahé (Fr.)
Pondicherry (Fr.)
Karikal (Fr.)
Madura
C. Comorin
Colombo
Galle
Aden (Br.)
Gulf of Aden
Socotra I. (Br.)
C. Guardafui
Hodeida
San'a
Asir
Hadramaut
Great Arabian Desert
Rangoon
Mandalay
Bhamo
Sadiya
Brahmaputra
Yangtze
Mekong
Salween
Irrawaddy
Tarim Basin
Takla Makan Desert
Gobi Desert
Kunlun Mts.
Himalaya Mts.
Mt. Everest
Tsinghai
Suchow
Tsitsihar
Harbin
Shanghai
Tokyo
Hong Kong
Singapore
Panama
Dakar
Habana
Odessa
Astrakhan
Lake Aral
Lake Balkash
Kirghiz Steppe
Caspian Sea
Black Sea
Bosporus
Dardanelles
Danube R.
Trebizond
Batum
Erzerum
Konia
Brusa
Cyprus (Br.)
Mediterranean Sea
Dead Sea
Suez
Sinai Pen.
Akaba
Hail
Bereida
Aneyzah
Aswan
Jidda
Port Sudan
Hodeida
Massawa
Addis Ababa
Berbera
Gulf of Aden
Karachi
Ahmadabad
Baroda
Surat
Nagpur
Bombay
Poona
Hyderabad
Goa (Port.)
Madras
Bangalore
Mahé (Fr.)
Pondicherry (Fr.)
Karikal (Fr.)
Madura
C. Comorin
Colombo
Galle
Calcutta
Chandernagore (Fr.)
Delta of the Ganges

2. India and Ceylon

As you already know, India is one of the most densely populated countries in the world. It is more than half as large as the United States, and is by far the largest and most important of the British lands in Asia. Within it live over three hundred million people, or about two thirds of all the people of the entire British Empire.

As you study about India, find answers to the following questions:

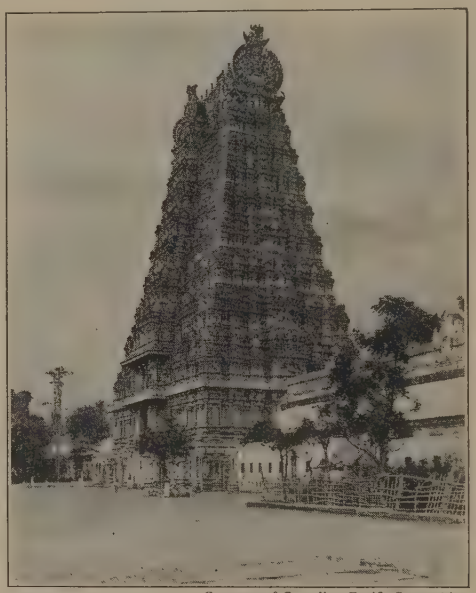
1. How can so many people make a living in this part of Asia?
2. How did the British come to control this densely populated country?
3. Why is India of value to the British people?
4. What have the British done to help the people of India?

A Country won through Trade

Early trade with India. For hundreds of years before the discovery of America the people of India and other countries of eastern Asia had been supplying the wealthy people of Europe with silks, spices, and precious stones. Camel caravans brought these products overland to the eastern end of the Mediterranean Sea, where they were met by trading ships from the European countries.

The trade with India was so profitable that every trading nation of Europe wanted a share in it, but the transportation of goods by camel caravan was slow and uncertain. This led the seafaring nations of Europe to search for a route by which they could send their ships directly to the ports of India. In 1492 Columbus tried to reach India by sailing west, and discovered the New World instead. A few years later Vasco da Gama, a Portuguese sea captain, discovered the southern route to India around Africa.

A commercial race. After Da Gama's discovery, Portugal, the Netherlands, France, and Great Britain became competitors in a commercial race for control of the trade with India. Each one built trading stations along the coast of India, and there was great rivalry between them. Great Britain won this race, and that is why India is now a part of the British Empire.



Courtesy of Canadian Pacific Steamships

Figure 117. The great gateway to an old Hindu temple at Madura, in southern India. The temple was built about three hundred years ago.

Trade and government. As the British increased their trade with India, they found it necessary to send soldiers to protect their merchants against some of the natives, and this led them to take a more and more active part in the government of the country. At times, too, they had to settle troubles between various groups of the native people, and this gave them still more power.

From India the British extended their control to take in Baluchistan on the west, Burma on the east, and the island of Ceylon at the south. Baluchistan and Burma are under the government of India, while Ceylon is a separate colony. Find Baluchistan, Burma, and Ceylon on the map on page 123.

Today the British govern directly about two thirds of India. The rest of the country is made up of native states which are governed by Indian princes, but even in these states there are British representatives who advise the princes in matters of government. The official name of this British possession is the Indian Empire, and the British king is also the emperor of India.

The People of India

The native people. The natives of India are dark-skinned people, but they do not belong to any one race. Instead, they represent a great mixture of races, and among them are many different groups who speak different languages and have different religions. The largest religious group is that of the Hindus, who make up about two thirds of the total population, and the next largest is that of the Mohammedans. In all the cities and in many of the smaller places in India we shall see beautiful temples and mosques, and we shall find that religion plays a large part in the life of the people. *See Figure 117.*

Among the native people there are a few rich *rajahs*, or princes, and many wealthy merchants. But most of the natives are very poor, and out of every hundred of them only about seven can read and write. The British have opened schools and colleges for the natives in the cities and larger towns, but as yet there are very few schools in the country districts.

A few of the young men of India go to England to study in British universities. When they return to their own country, some of them become teachers, some go into business, and some take positions in government offices. These educated men are helping the British to teach the people of India European ways of living and working, and of carrying on business and trade.

The Europeans in India. The number of Europeans in India is very small compared with the number of natives. The Europeans are mostly British officials and merchants and their families. Although the British control India, they have worked out a plan which gives the educated natives a chance to share in the government. Thus India is in part self-governing.

The Land and the Climate

Map work. Before you read further, use the map on page 123 to work out the following map studies.

1. Trace the tropic of Cancer across India. 2. The part of India south of that line is called *peninsular India.* Explain why. 3. What plateau makes up most of peninsular India? 4. What seems to be the most important kind of work there? 5. What kind of land do you find north of the Dekkan? 6. This region is called the plain of northern India. Judging from its latitude, what can you safely say about its climate? 7. What kind of work is most important in this region?

8. The map shows that the plain of northern India is made up of the basins of three great rivers and their tributaries. What rivers are they? 9. Which one flows into the Arabian Sea? 10. Which two flow into the Bay of Bengal? 11. In what mountains do all three rivers rise? 12. What have you already learned about those mountains? 13. Now turn to Figure 112 on page 119 and tell whether or not most of India has enough rain for farming.

The natural regions of India. You have learned from the map that India is a warm country with abundant rainfall, and that it may be divided into three great natural regions: (1) the high, rugged mountains on the north, (2) the great northern plain, and (3) the plateau region called the Dekkan.

The northern plain is remarkably level, and the soils are fine and very fertile, for they have been laid down by the great rivers that rise in the Himalayas and flow through India to the sea. The Dekkan is from 1000 to 3000 feet above the sea; and while it is by no means level, it is not too rough for farming. In the northwestern portion of this region there are rich lava soils like those in the Columbia Plateau of our country.

With all these facts in mind, what can you say about the suitability of the greater part of India for farming?

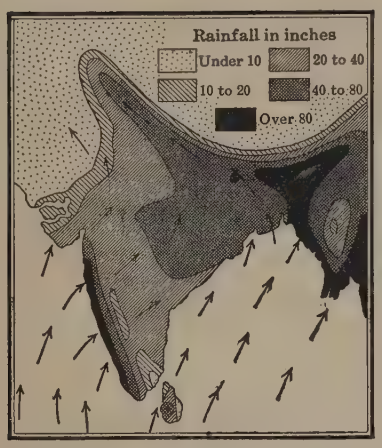


Figure 118. Distribution of rainfall in India during the period of the summer monsoons.

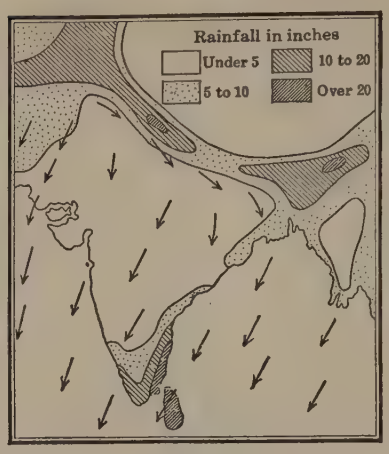


Figure 119. Distribution of rainfall in India during the period of the winter monsoons.

The arrows on both maps show the direction of the winds.

The monsoon winds and rains. You may have heard people say that India is a monsoon land. The word *monsoon* means "seasonal," and India is called a monsoon land because its winds change with the seasons.

During the northern summer the interior of the great continent of Asia becomes very warm. The warm air over the land tends to rise, and the cooler air from over the oceans moves inland close to the earth. Because of this movement of air, India has winds from the southwest in the northern summer. These winds begin to blow in June and usually last until sometime in October. They are called the *summer monsoons*. As they blow from the southwest toward India, they gather up much moisture in crossing the Indian Ocean. When they strike the land, they are forced to rise. In rising they are cooled, and the rain falls. Thus the summer monsoons are wet monsoons and bring much rain to India during the hot months of the year. *See Figure 118.*

The monsoon rains are especially heavy on the western coast of peninsular India, where the winds first strike the land. They are also very heavy in Burma, where the winds strike the land after crossing the Bay of Bengal.

In the northern winter the interior of Asia becomes very cold. The cold air is heavy, and it settles to the ground and then moves outward from the center of the continent. This outward movement of air gives India winter winds from the northeast. These winds usually begin in December, and they are called the *winter monsoons*. Figure 119 shows that much less rain falls in India during the period of the winter monsoons than during the period of the summer monsoons. These northeast winds, blowing toward India from over the land instead of the sea, are dry monsoons, for they bring very little moisture with them. Therefore the mild winter is the dry season in India.

Rainfall and farming. The seasonal distribution of rainfall in India plays an important part in the life and work of the people. During the rainy season the farmers raise crops such as rice, sugar cane, and cotton, which need much heat and moisture. During the dry season they raise wheat, millet, and other crops which can get along with less moisture. In this way most of the farmers of India get at least two crops a year from their land. That is one reason why so many people can live in India.

In some years the monsoon rains are late in coming, and much less rain falls than usual. At such times the crops are poor, and millions of the people suffer from hunger. Famines, as such periods of food shortage are called, have occurred many times in India in the past, and in some of the worst famine years hundreds of thousands of people have died of hunger. Conditions are better now, for the British have built railroads in India, and food supplies can be sent quickly to the famine areas from other parts of the country.

A monsoon test. Prove that you understand about the monsoon conditions in India by completing each sentence below:

1. India is called a monsoon land because _____.

2. The winds that blow over India in the northern summer come from the __(direction)__ and are called the _____ _____ or the _____. They bring much _____ to India because _____.

3. The winds that blow over India in the northern winter come from the __(direction)__ and are called the _____ _____ or the _____. They bring little _____ to India because _____.

Figure 121. A dry-goods shop in Bombay. Goods of many different kinds are sold in little shops like this, but there are also many larger stores.

From Bombay to Calcutta

Bombay. Our ship has brought us across the Arabian Sea to Bombay, the second largest city of India and the leading seaport of the western coast. In its harbor, which is one of the best in the world, we shall see ships from many distant lands. Find Bombay on the map on page 123 (*K7*) and study Figure 120.

Judging from the map, what do you think our ship may have brought from London to Bombay? What do you think it is likely to carry back from Bombay to England? What do you find among the exports which suggests that Bombay is a manufacturing city?

In Bombay we shall see many things to remind us of the work that the British are doing in India. Along the water front there are large docks and warehouses like those in any great European port, and in the business section there are modern banks and office buildings. In the manufacturing district we shall see many different kinds of mills and factories equipped with up-to-date machinery from England. Among them are more than eighty cotton mills, for Bombay is the leading cotton-manufacturing city of India.

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Figure 120. A view of Bombay. This seaport of western India is a city of over a million people, among whom are many wealthy Indian merchants and many British business men and officials.

We shall also see a large railroad station in Bombay, for the British have built railroads to connect this seaport with other parts of India. Its location on the western coast and its railroads make Bombay the gateway city for the west-central part of India and the chief port through which imports from Great Britain enter the country.

Although we shall see much that is new and modern in Bombay, we shall also see many things to remind us that India is a very old country

Photo by Elmendorf from Ewing Galloway, N.Y.

Figure 122. Harvesting rice in southeastern India. The seeds are planted in June and the grain is harvested in January. Can you explain why? India is one of the world's great rice-growing countries, and rice is the chief food of millions of the people.

Courtesy of Canadian Pacific Steamships

Figure 123. Drawing water for irrigation from a well in India. Can you explain how the bucket is lowered into the well and then lifted, full of water?

where the people are slow to change their ways of living and working. On the sidewalks Englishmen in European clothes pause to chat with Indian merchants in native dress and bright-colored turbans. In the streets modern automobiles pass slow-moving oxcarts and two-wheeled carts pulled by natives. If we visit the little native shops, we shall find them nothing more than stalls opening on the sidewalks. *See Figure 121.*

The tropical west coast. Leaving Bombay, we steam southward for about 800 miles along the west coast of India, where the monsoon rains are very heavy. The western margin of the Dekkan is called the Western Ghats, and it rises so near the sea that there is only a very narrow lowland along the coast. This coast is densely populated by natives who make their living by raising rice and tropical crops which need much heat and moisture. Few white people care to live here because of the hot, moist climate.

The eastern coastal lowland. When we round the southern end of the peninsula and turn northward, we find that the eastern margin of the plateau (the Eastern Ghats) is some distance inland and that there is a lowland from fifty to a hundred miles wide along the coast. Here too the population is very dense, and most of the people make their living by farming. Among the crops which they raise are rice, cotton, sugar cane, and tropical fruits. Although the total rainfall for the year in this region is heavy, most of it comes between June and December, and the crops that are grown during the dry season have to be irrigated. *See Figures 122 and 123.*

Madras. On the map on page 123 find the city of Madras (*M8*). Madras is the third largest city of India, and the ocean gateway for the southeastern part of the country. It has no natural harbor, but the British have made an excellent one by building great breakwaters such as we saw at some of the ports along the west coast of South America. They have also built railroads to connect Madras with other parts of India. Like Bombay, Madras has cotton mills and exports raw cotton and cotton goods. It also has tanneries which make use of hides and skins from the plateau.

From Madras to Calcutta. From Madras we sail northeastward toward the great delta which the Ganges and the Brahmaputra rivers have built out into the Bay of Bengal. On this low delta plain is the great city of Calcutta. Find Calcutta on the map on page 123 (*N 6*).

The approach to the great delta is dangerous for large ships, for there are hidden sand bars beneath the water. For this reason we take on a special pilot when we are still 120 miles from Calcutta. He guides the ship safely into the mouth of the Hooghly River, which is one of the larger outlets, or distributaries, of the Ganges. Calcutta is 80 miles inland on the Hooghly. The river has been deepened by dredging, so that ocean ships may go upstream to docks in the city.

Figure 124. Bales of raw jute in a mill at Calcutta. The jute mills in this city provide work for many thousands of people. What city in Scotland is an important jute-manufacturing center?

Another gateway city. At Calcutta the British have provided all kinds of modern machinery for loading and unloading ships, for this city is an even greater seaport than Bombay. Turn to the map again and name its leading exports. What raw materials do you find among them? What manufactured goods?

Calcutta is the largest city of India, and the ocean gateway for the most fertile and most densely populated part of the northern plain. Many of its buildings, streets, and shops are modern, for it was planned and built by the British. Most of its people, however, are natives, and the city has its bazaars, or open markets, where the native people buy and sell goods, and its temples and mosques.

Jute-manufacturing. Besides being a great seaport, Calcutta is a busy manufacturing city. Along the river front you will see many jute mills, for Calcutta is the world's leading center for jute-manufacturing. In the mills the fibers of jute stems are spun into yarn and woven into the coarse cloth which we call burlap. *See Figure 124.*

Each year shippers of cotton, coffee, sugar, and many other farm products in many different countries need large quantities of burlap and millions of gunny sacks, or burlap bags. For this reason almost every country in the world buys jute or jute products from India. What countries of the Americas do you think are good customers for burlap and gunny sacks?

Map discoveries. Turn to the map on page 123 and find answers to the following questions:

1. In what way is the location of Calcutta like the location of New Orleans?
2. What seaport of the West Indies is in the same latitude as Calcutta? (See western margin of map.)
3. Why has Calcutta become the great jute-manufacturing center of India?
4. Why has Bombay, rather than Calcutta, become the great cotton-manufacturing center?

Something to explain. Large quantities of burlap manufactured in mills in Calcutta are shipped to New Orleans. What reason can you give for this fact?

Figure 125. An Indian farmer plowing with a wooden plow drawn by a pair of "humped" bullocks, as they are called from the humps on their backs. Humped cattle are common in all parts of India.

Farm Lands and Inland Cities

A great agricultural country. Let us imagine that we have an airplane in which to fly over India. No matter what season we choose for the trip, we shall see countless people at work in the fields, for nine tenths of the natives are farmers, and the climate is so warm that farm work goes on the year round.

Except in the mountains at the north the surface of India is well suited to farming, and most of the country is well watered. Thus the latitude, the surface, and the rainfall combine to make India one of the great agricultural countries of the world. In addition to these natural advantages the dense population provides cheap labor, or workers, and therefore India can produce large quantities of crops such as cotton and tea, which require much handwork.

As you would expect in such a thickly settled country, food crops are of the greatest importance, and enormous quantities are needed to supply the home markets. But the people also raise cotton, jute, and certain other crops in sufficient quantities to have a large surplus for export.

Farming scenes. We shall see many differences between the farm lands of India and those of our own country. Most of the farms are small, and few of the people use farm machinery. We shall see them plowing with bullocks, or oxen, or with "water buffaloes," such as we saw in the Philippines, and harvesting their crops by hand. *See Figure 125.*

Farm animals. Although there are millions of cattle in India, we shall not find any great ranches, and we shall see very few dairy farms. The cow is a sacred animal to the Hindus, and they will not use its meat for food. Even the milk is not used to any extent. Because of this, little attention is paid to raising cattle for milk or beef. Cattle in India are valuable chiefly as work animals, and for their hides when they die. Nearly every farmer has a pair of bullocks, which

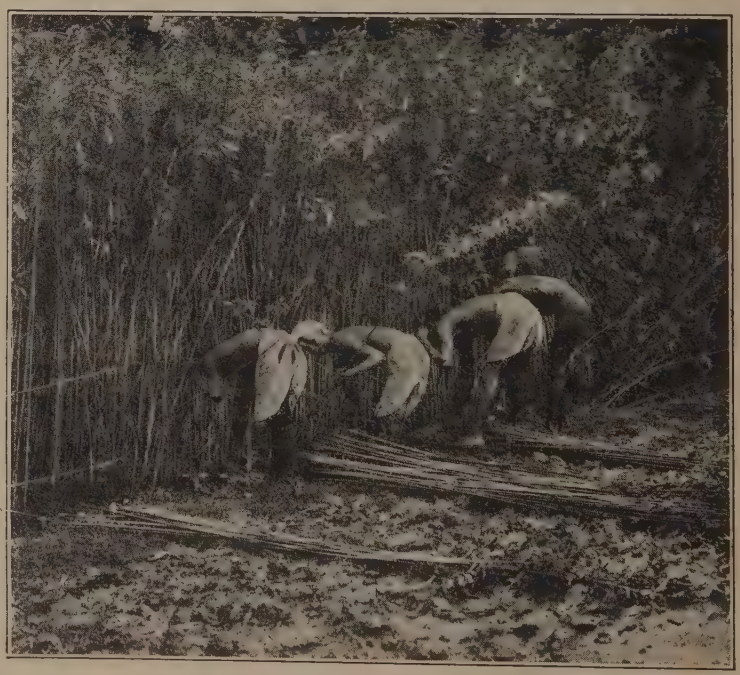

Figure 126. Harvesting jute on the Ganges delta in India. After the stalks have been cut, they are soaked in water and the fibers are scraped from them. Then the fibers are dried and packed in bales for shipment to mills in Calcutta or to distant lands.

he uses to draw his plow and to pull the high-wheeled cart in which he carries his produce to market.

The people of India raise many sheep, especially in the Dekkan, but neither the wool nor the meat is of very good quality. Goats are found everywhere in the country, for they require little care and can live on the poorest of shrubs and grass. Both sheep and goats are raised chiefly for their skins. As you might expect, hides and skins are important exports from India.

Figure 127. Indian girls picking tea leaves on a plantation near Darjeeling. Since the picking is done so often, the tea plantations provide work for many people throughout the year.

Rice and jute lands. If we fly northeastward from Calcutta, we shall find that the chief crops on the low, flat lands of the great delta are rice and jute. The delta plain is covered with a network of streams, and farm products are carried to market in boats.

Every year, during the rainy season, the rivers rise and overflow their banks, flooding the low delta lands. To avoid danger from floods the people build their houses on mounds of earth in the midst of their fields. In this way they are safe from ordinary floods; but in years when the rains are very heavy and the waters rise unusually high, they have to leave their houses in boats to escape being drowned.

Although the great floods do much damage, the ordinary ones are helpful, for they leave a layer of fine, rich soil spread over the land, and they provide an abundance of moisture for crops. Both rice and jute are crops which need much water while they are growing, and this great delta plain is wonderfully well suited to them. *See Figure 126.*

Tea plantations. If we fly northward to Darjeeling and then eastward along the valley of the Brahmaputra, we shall look down on whole hillsides covered with tea plantations. Tea plants grow best on well-drained hillsides where the yearly rainfall is over 80 inches. In warm countries new leaves keep coming out the whole year long, and in India they are picked at least once, and often twice, a month. *See Figure 127.*

After the leaves have been picked, they are carefully dried and prepared for use. India exports much tea to Great Britain, for the British are great tea-drinkers.

Farming in the Dekkan. If we return to Calcutta and then fly southwestward, we shall soon find ourselves crossing the Dekkan. This plateau is a region where millions of people make a living on small farms. Turn to the map on page 123 and make a list of the crops that you expect to see growing there.

The principal food crop of the Dekkan is millet, though rice is grown in the moister sections. The principal money crops are oil seeds and cotton. The oil seeds include cottonseed, flaxseed, mustard seeds, peanuts, and several other kinds of seeds that are rich in oil. Large quantities of them are exported to Great Britain and other European countries,

Orient and Occident

Figure 128. An Indian farmer hauling his cotton to market in his two-wheeled bullock cart. What two seaports of India use large quantities of cotton from the Dekkan in their mills?

where the oil is pressed out of them and used for many different purposes. In the production of cotton India ranks next to the United States, and the greater part of the crop is grown in the Dekkan. *See Figure 128.*

An old native city. The largest city of the Dekkan is Hyderabad. It is the capital of one of the native states, and the fourth largest city in India. It is very old, and quite different from the great seaports of India, for it is an inland city and has not yet become a manufacturing center. The most interesting sights in the city are the bazaars, where the people from the country round about sell their farm products and buy cotton goods and other things that they need.

The dry plain of the Indus. If we fly northwestward from Hyderabad to the plain bordering the Indus River, we shall find ourselves in a part of India which has so little rain that the farmers must irrigate all their crops with water from the river or from wells. The British have done much to develop irrigation in this region, and the farmers now raise large crops of wheat, barley, corn, millet, and rice. Cotton also is becoming an important crop in this region.

Karachi. The ocean gateway for the plain of the Indus is the seaport of Karachi. Find this city on the map on page 123 (*J6*). What does it export?

For a long time Karachi was only a small settlement, but it has grown fast since the development of irrigation and the building of railroads in the plain of the Indus. Today it is one of the five leading seaports of India, and the chief port for the shipment of wheat.

Baluchistan. West of the plain of the Indus is the mountain and plateau region known as Baluchistan. It is a very dry region, and the few people who live there are mostly nomads who wander about with their flocks and herds. Like all nomadic people, they suffer from hunger in years when the little rain on which they depend fails and many of their animals die. In former years these nomads were sometimes driven by hunger to attack and rob the people in the neighboring lowland of India, and it was to stop these attacks that the British took possession of Baluchistan.

The northern plain of India. It will be interesting to fly up the valley of the Indus and then turn southeastward and return to Calcutta by way of the Ganges Valley. On this trip we shall pass over the northern plain of India, which is one of the richest parts of the country. Within it are many of the finest old Indian cities and some of the best farm lands of the country. *See Figure 129.*

In the upper part of the Indus and Ganges valleys we shall find that the principal winter, or dry-season, crops are wheat, barley, and millet, and that they are irrigated by a great system of canals and wells which the British have built. Among the important summer, or wet-season, crops are cotton and sugar cane. Farther east, in the lower plain of the Ganges, where the rainfall is heavier, the cotton fields disappear and the wheat fields give way to rice fields.

Figure 129. A picture taken on the road to the old city of Benares, in the Ganges Valley. Bullock carts loaded with all kinds of goods are constantly coming and going on the roads which connect the cities of this densely populated region. At the left in the picture is a little booth where food is sold to travelers.

The capital of India. In the midst of the northern plain is Delhi, the capital of India. Because of its central location in the plain, Delhi long ago became a meeting place for roads in northern India, and today it is the most important inland railroad center of India. The city now has a large number of British residents. What brings them there?

On the map on page 123 find Delhi (*L5*) and the town of Simla (*L4*). In what region of India is Simla? This town is about 7000 feet above sea level, and every summer the government officials move up there from Delhi. Can you explain why a mountain town is used as the summer capital for India?

Old cities of the Ganges Valley. As we fly down the Ganges Valley, we shall surely stop at Agra to see the beautiful building called the Taj Mahal. It is made of white marble, and many people think it the most beautiful building in the whole world. *See Figure 130.*

We shall also wish to stop at Benares on the Ganges River. The Ganges is the sacred river of the Hindus, and Benares is the center of their religion. Many thousands of Hindus come to this old city every year to worship in its hundreds of temples and to bathe in the sacred waters of the river.

At Delhi and other places in the northern plain we shall see cotton mills, flour mills, sugar mills, and other modern manufacturing plants which make use of raw materials from the farm lands. But we shall probably be much more interested in the little workshops where native craftsmen make many beautiful things by hand. We shall see some of them carving ivory, others making pottery, and still others hammering copper into beautifully shaped cups, vases, and other forms.

At Agra, Benares, and some of the other old cities we shall see native people weaving beautiful striped silks and gold brocades on hand looms. In fact, all through India we

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Figure 130. The Taj Mahal, at Agra. This beautiful marble building was erected about three hundred years ago by an Indian ruler in memory of his wife.

shall find that among the millions of people who cannot read or write there are many who are wonderfully skillful in making beautiful things with their hands. *See Figure 131.*

The Himalaya Mountains

The highest mountains in the world. When you were studying the map of Asia, you learned that the Himalayas are the highest mountains in the world. They rise like a great wall on the northern side of India, and among their summits are snow fields and glaciers which never melt away. *See Figure 132.*

The rainfall on the southern side of the Himalayas is so heavy that the lower slopes are covered with thick forests. The lowest forests are made up of bamboos and many other tropical trees. Higher up, where the air is cooler, there are forests of pines and other evergreen trees, and still higher come the grassy slopes which are too cold for trees.

Work in the mountains. In the mountains north of the Plain of the Indus there are many fertile valleys where the people raise a variety of food crops and keep cattle and sheep. These mountain people are very skillful in the weaving of wool, and they make beautiful rugs and shawls which are sold in many parts of the world. You have probably heard of the cashmere shawls which are made in the mountain valley of India known as the Vale of Kashmir.

Nepal and Bhutan. On the map on page 123 find Nepal and Bhutan on the southern slopes of the Himalaya Mountains. These are independent kingdoms, but each one has a British adviser who helps the native ruler in dealing with outside countries. The people get their living chiefly by farming and raising cattle, and what little trade they have is with India on the south and Tibet on the north.

Burma

Rangoon and the Irrawaddy Valley. If we wish to visit Burma, we shall probably go by boat from Calcutta to Rangoon. This city is the capital, the largest city, and the seaport of Burma. Find it on the map on page 123 (*P 7*) and notice its location near the mouth of the Irrawaddy River. What is its leading export product?

The delta of the Irrawaddy River is hot and rainy, and the people raise so much rice there that they have a surplus for export.

Herbert Photos, Inc.

Figure 131. An Indian craftsman. He is stamping a design in colors on a piece of cotton cloth which he has woven on a hand loom. Have you ever seen bright-colored printed cotton goods from India?

Photograph by Ewing Galloway, N.Y.

Figure 132. A view of Darjeeling, showing the high, snow-capped peaks of the Himalayas in the distance. How do you explain the fact that there are trees on the foothills where Darjeeling is located, but none on the higher slopes of the mountains beyond? What winds bring much rain and snow to the Himalayas?

Farther up the Irrawaddy Valley the rainfall is somewhat less, and the people raise millet, cotton, and other crops in addition to rice.

Teak and petroleum. Another important export from Burma is a beautiful hard wood called teak. The trees are cut in the dry season and dragged to the rivers, where they are bound together on bamboo rafts. When the rains come and the rivers rise, the rafts of logs are floated downstream to the sawmills. Teakwood is so heavy that the natives use elephants to get the logs out of the forests and to move the lumber in the lumber yards. *See Figure 133.*

The most valuable mineral product of Burma is petroleum. Find the oil fields of Burma on the map on page 123. Pipe lines have been built to carry the oil from these fields to refineries and to Rangoon for export.

Manufacturing and Trade

Handwork. For thousands of years the people of India have been famous for their skillful handwork. Weaving, pottery-making, metal-working, and carving are old, old industries in India, and they are found side by side with the modern manufacturing industries which the British have introduced.

Advantages for manufacturing. The British have been quick to see the advantages which India has for manufacturing. The farms provide large quantities of raw materials, and the dense population insures abundant labor, or workers, for the mills and factories, and large home markets for manufactured goods. Turn again to the map on page 123 and tell what India has in the way of fuel to make steam power.

Courtesy of Hamburg-American Line

Figure 133. An elephant piling teakwood in a lumber yard at Rangoon. Have you ever seen chairs, tables, or other pieces of furniture made of carved teakwood?

The leading industries. Because India has all these advantages for manufacturing, the British have built mills and factories and have equipped them with machinery made in England. At present the two leading industries are cotton-manufacturing and jute-manufacturing because cotton and jute are the two most important raw materials produced in India. You already know that there are markets all over the world for jute goods. For cotton goods there is a large home market, for the millions of poor people in India wear cotton clothing.

The trade of India. From the map on page 123 make a list of the exports of India, dividing them into two classes: (1) products of farming and (2) products of manufacturing. Which kind of work provides more of the export products? Among the exports of farm products do you find more foodstuffs or more raw materials? How do you explain this?

Of all the exports of India, raw cotton is the most important. About half the yearly crop is exported, and Japan is the best customer. Great Britain takes about one fifth of the exports of India, buying most of the tea and wheat that are shipped away, and large quantities of the raw jute and oil seeds. Our own country is India's best customer for burlap and hides and skins.

Now turn to the map on page 123 again and study the imports of India. What do you find there to show that as yet India does not manufacture enough cotton cloth to supply the home market? What country exports large quantities of cotton goods to India?

The imports show that India also provides an excellent market for machinery, iron and steel goods, automobiles, and mineral oils. Great Britain, the United States, and Germany lead in supplying these needs.

Altogether Great Britain supplies nearly half of all the imports of India. This great country, with its many millions of people, is one of Great Britain's best markets for manufactured goods. It is this fact, more than anything else, that makes the Indian Empire of great value to the British people.

Courtesy of Canadian Pacific Steamships

Figure 134. Rice fields in Ceylon. Rice is a plant which needs much moisture, and so the fields are flooded during the early part of its growth. Why is Ceylon well suited to rice-growing?

Ceylon

A tropical island. Southeast of India is the pear-shaped island of Ceylon, which is about half the size of England. The center of the island is hilly and mountainous, but there is a lowland around the coast. The lowland is hot and moist because Ceylon is near the equator and has a monsoon climate. The lowland is well suited to rice-growing, and rice is the chief food of the natives. *See Figure 134.*

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Figure 135. A tea factory on a plantation in Ceylon. In the factories the tea leaves are carefully cured and prepared for export. The two-wheeled carts carry the tea to the seaport of Colombo.

Plantation products. In India you found most of the natives working on small farms. In Ceylon many of the natives work on large plantations owned by British and other European planters. On the coastal lowland there are coconut plantations. On the lower mountain slopes in the southwestern part of the island there are rubber plantations, and on the higher slopes in the same section there are large tea plantations. *See Figure 135.*

About fifty years ago the British sent several thousand seedlings of Brazilian rubber trees to Ceylon and established the first plantation there. That was the beginning of rubber-growing in southeastern Asia. From Ceylon the plantations spread to British Malaya and the East Indies, and this part of Asia now produces more than nine tenths of the world's rubber. From Ceylon rubber is the second most valuable export. Tea ranks first.

Colombo and its trade. Find Ceylon on the map on page 123 and locate its seaport of Colombo (*M9*). The location of Colombo on the southwest coast of the island makes it an important port of call for ships on their way back and forth between the countries of Europe and the countries of eastern Asia.

At Colombo you will see ships being loaded with tea, rubber, copra, coconuts, and coconut oil. These plantation products go chiefly to Great Britain, other European countries, and the United States. Another export product is graphite, a mineral which is mined in Ceylon. One of the uses of graphite is in making the "lead" for pencils.

Many of the ships that come to Colombo bring rice from Burma and neighboring lands. Rice is the leading import, for the people of Ceylon do not raise enough to supply their needs. The next most valuable import is cotton goods for clothing, which come largely from India.

Can you name these products? Name each agricultural product described below.

1. A plant fiber grown in India, used in factories in Bombay and Madras, and also exported in large quantities.
2. A plant fiber grown on the Ganges delta and used in many factories in Calcutta.
3. The leading crop grown for food by the people of India and Ceylon.
4. A plantation product exported from both India and Ceylon, much of it going to England.
5. The important raw material for manufacturing exported from Ceylon.

3. British Possessions in the Far East

When we speak of the "Far East," we mean China, Japan, and the neighboring countries of eastern Asia. Another name for the Far East is the Orient, which means simply "the East," and we often call the people of that part of the world Orientals.

The lands of the Far East are shown on the map on page 346. Turn to that map and find British Malaya (*B6*), the British lands in Borneo (*C6*), and the island of Hong Kong (*C4*). These are the British possessions in the Far East. As you study about each one, try to decide why it is of value to the British people.

British Malaya. British Malaya is in the southern part of the Malay Peninsula, which stretches southward from Burma. In the interior of the country there are heavily forested mountains, but along both coasts there are lowland plains. These plains are hot and rainy the year round, and are used for plantations of rubber, coconuts, sugar cane, rice, pineapples, and other tropical products.

Courtesy of Canadian Pacific Steamships

Figure 136. A tapped rubber tree on a plantation in British Malaya. The latex flows into a little metal trough and then drips into the cup below.

Rubber plantations. British Malaya produces about four tenths of all the world's rubber, and this important raw material is the most valuable export of the country. Most of the large plantations are owned by British and other European rubber companies, and altogether they cover hundreds of thousands of acres. More than two thirds of the plantation laborers are natives of India, and the rest are mostly Chinese and Malays.

On the plantations the rubber trees are set out in rows and carefully tended. Every other day, early in the morning, the laborers "tap" the trees by removing a thin shaving of the bark with a sharp knife. This starts the flow of the creamy-colored latex, which drips into small cups fastened to the trees. *See Figure 136.*

Later in the morning the laborers collect the latex in pails and carry it to the factories on the plantations. In the factories the latex is treated in such a way that it thickens. When it is thick enough, it is "milled," or pressed into long, narrow sheets, and the sheets are hung up to dry. When they are dry enough, they are packed in boxes or bales and sent to Singapore for export to Europe and the United States.

From some of the plantations the liquid latex is now sent in tanks to Singapore and there loaded in tank steamers which carry it to the United States.

Tin-mining. British Malaya is also the leading country in the production of tin, providing about one third of the world's supply. The tin ore is found near the surface of the ground, mixed with clay, sand, and gravel. At some of the mines the workmen use huge hose to loosen the ore-bearing earth and to wash it into troughs where the ore is separated from the worthless rock material. At others great dredges which are run by electric power are used instead of hose.

From the mines the tin ores are sent to smelting plants at Singapore and on the island of Penang. Nearly all the tin from the smelters is exported, and much of it goes to the southern part of Wales. Can you explain why?

Figure 137. Small freight boats at Singapore. Hundreds of such boats are used to transfer goods from one ship to another, and to carry goods back and forth between ships anchored in the harbor and warehouses on shore. Singapore is a world market for the buying and selling of rubber. Can you explain why?

Singapore. On the map on page 346 find the city of Singapore (*B6*) and notice its location at the southern entrance to the Strait of Malacca. Singapore is called the "Gateway to the Orient," and it is one of the greatest seaports and trading centers of the world. Can you suggest any reasons for its growth?

Turn to the map on pages 386–387, and you will see that all ships using the shortest route between ports of Europe or India and ports on the eastern coast of Asia must swing around the southern end of the Malay Peninsula. You will also see that the southern entrance to the Strait of Malacca is the meeting place for ships on this great trade route.

Singapore is located on a little island of the same name. In 1819, when the British gained possession of the island, it had only a few hundred people. Today it has about half a million, nearly three fourths of whom live in the great seaport.

It is the location of Singapore which accounts for its wonderful growth. Into its harbor come ships from all over the world, and many of them exchange cargoes there. Others bring goods to be distributed from Singapore to neighboring parts of Asia and the East Indies, and carry away rubber, tin, and other products of Malaya and the neighboring lands. Because of its great trade Singapore is one of the most valuable outposts of the British Empire. *See Figure 137.*

British Borneo. The large island of Borneo is one of the East Indies. The greater part of it belongs to the Dutch people, but the

Figure 138. A street in Hong Kong. Notice the Chinese rickshaw at the left, the Chinese coolies carrying burdens hung from yokes on their shoulders, and the Chinese signs outside the shops.

British control a section in the northwest about as large as Scotland. Most of the population is made up of natives and of people who have come from other far eastern lands, and they get their living by raising various tropical products.

The British have established rubber plantations in their part of the island, and rubber is one of the more important exports. Most of the trade is carried on through Singapore and Hong Kong.

Hong Kong. The small island of Hong Kong, off the south coast of China, was ceded, or transferred, to Great Britain by the Chinese in 1841. The island is separated from the mainland by a narrow strait, and a small part of the mainland has been leased to the British. The harbor is between the island and the mainland, and there are docks for ships on both sides.

Hong Kong, like Singapore, is a great seaport and trading center where ships from all parts of the world stop and exchange cargoes. It is also one of the chief gateways through which the exports of China are shipped to distant lands. The population of the city is chiefly Chinese, but the British control the government. Many wealthy Chinese merchants have their headquarters in Hong Kong, where they are under British protection. *See Figure 138.*

Weihaiwei. Much farther north on the coast of China is a smaller area which the Chinese have leased to the British. This area includes the port of Weihaiwei, which the British use as a base for one of the squadrons of their navy. Find this port on the map on page 346 (*D3*).

British islands in the South Pacific Ocean. Among the large number of small tropical islands in the South Pacific Ocean there are many which have come in one way or another to belong to the British. Find these British islands on the map on pages 90–91. Some of them are low islands of coral rock, and others are the tops of volcanic mountains which rise high above the sea. The higher islands have heavy rainfall because the winds that strike them rise, become chilled, and give up their moisture. The mountain slopes of these islands are densely forested, and the coastal lowlands are fringed with coconut palms.

The native people of these islands find life very easy. They need but little clothing, and small huts thatched with palm leaves provide them with shelter from the sun and rain. Coconut trees, banana plants, and breadfruit trees furnish much of their food, and the rest comes largely from the sea, for the natives are skillful fishermen.

Some of the islands are used as coaling and repair stations for British ships, and as radio and cable stations where messages can be sent and received. This is the chief reason why the British care to hold them.

Testing yourself. Each of the cities listed below this exercise belongs to one of the following phrases. Write the names in their correct order.

1. The largest city of India and the world's greatest jute-manufacturing center.
2. The center of the Hindu religion.
3. The capital of India.
4. India's leading cotton-manufacturing city.
5. The capital and largest city of Palestine.
6. The seaport of Ceylon.
7. The great seaport of British Malaya, called the "Gateway to the Orient."
8. A famous old trading center in Irak.
9. The gateway for the Indus Valley and the chief wheat-exporting port of India.
10. The seaport of Burma.
11. The seaport of southeastern India.
12. The port at the junction of the Tigris and Euphrates rivers.

Bagdad	Calcutta	Karachi
Basra	Colombo	Madras
Benares	Delhi	Rangoon
Bombay	Jerusalem	Singapore

Can you name these places? You have learned that the British hold several important places which give them control of the great shipping route from western Europe to eastern Asia. Name the place which guards

1. The western gateway to the Mediterranean.
2. The narrowest part of the Mediterranean.
3. The northern entrance to the Suez Canal.
4. The southern entrance to the Red Sea.
5. The southern entrance to Malacca Strait.

Making choices. Choose the correct ending for each of the following sentences:

1. The chief food crop of India is
millet. sugar cane. rice. wheat.

2. The most important raw material for manufacturing produced in India is
rubber. hides and skins. wool. cotton.

3. The most important raw material for manufacturing produced in British Malaya and Ceylon is
jute. cotton. rubber. wool.

4. British Malaya produces about one third of the world's supply of
manganese. copper. iron. tin.

5. The most valuable export of Ceylon is
tea. coconuts. sugar. rice.

6. The British control valuable supplies of petroleum in
British Malaya. Burma. Ceylon.

7. The exports of India are chiefly products of
mining. farming. lumbering. fishing.

8. The imports of India are largely
manufactures. foodstuffs. raw materials.

9. The leading exports from India to Great Britain are
cotton and rice. tea and raw jute. sugar and coconuts.

10. The United States is India's best customer for
raw jute and tea. cotton and wheat. burlap and hides and skins.

Sentences to complete. Complete each sentence below correctly:

1. The highest mountains in the world are the _____.
2. The winds which bring rain to India are the _____ _____.
3. The plateau of India is called the _____.
4. The eastern and western margins of the plateau are called the _____.
5. The sacred river of the Hindus is the _____.
6. The beautiful building at Agra is the _____.
7. The island off the south coast of China which belongs to the British is _____ _____.
8. The island southeast of India which belongs to Great Britain is _____.

Some things to explain. Explain what the British have done in India to (1) help the farmers; (2) provide better means of transportation; (3) educate the people; (4) prevent famines.

Special credit work. Try to find a book which describes the Taj Mahal and tells about its history. Report to your class on this subject.

AUSTRALIA
AND
NEIGHBORING ISLANDS
Scale of miles
0 200 400 600 800
Water less than 500 ft. deep
Floating ice
Wet-weather streams
Grasslands and cultivated areas
Temperate forests
Tropical forests
Semideserts, deserts, and barren mountain slopes
Great Barrier Reef

V. THE COMMONWEALTH OF AUSTRALIA

Foreword. After our visits to the British lands in Asia, where we saw so many dark-skinned people and heard so many strange languages, Australia will seem almost like home. Nearly all the Australians are people of British descent, and so they speak the English language. They have adopted a "White Australia policy," which means that they have laws which make it almost impossible for people of the darker-skinned races to settle in their country. They want only white people, and they prefer British settlers to all others.

Turn to pages 378–379 and compare Australia and the United States in size and population. Notice that while Australia is almost as large as our country, it has only about one twentieth as many people. In fact, the number of people in the entire continent is not much greater than the number who live in New York City.

Below are some questions for which you will want to find answers as you study about Australia. Read them through, and then make a list of any other questions about the island continent that you would like to have answered.

1. How does Australia happen to be part of the British Empire?
2. What is there about Australia that has led many people from the British Isles to settle there?
3. What natural resources has Australia, and how are the people developing them?
4. What problems must the Australians solve in developing their country?
5. Why is the population of Australia so much smaller than the population of the United States?

Map work. Begin your study of Australia by working out the map studies in Group I on page 145.

1. Discovery and Settlement of Australia

Turn to the map on pages 382–383 and tell what European explorers visited Australia about the time when the first settlements were being made on the eastern coast of our country. What parts of the coast of Australia did they see? Which coast of Australia was visited much later by an Englishman? Do you know why the Dutch made no settlements in Australia, and why the British, who came much later, now hold the entire continent?

Dutch explorations. As it happened, the Dutch discoverers of Australia saw some of the least attractive parts of the continent, for the northern coast is a moist, tropical land, and the parts of the western and southern coasts which they saw are very dry. When they learned that there were no silks, spices, or precious stones to be had in Australia, they went away disappointed, and they lost interest in this new-found land. More than a hundred years passed before any of the people of Europe attempted to learn more about this southern continent.

The first settlements. Captain James Cook, a famous British explorer, visited the southeastern part of the coast of Australia in 1770 during a journey around the world. That part of the coast has a mild climate with abundant rainfall, and is attractive to white people. Captain Cook took possession of the entire eastern coast in the name of the British king; and when he returned to England, he made such a favorable report concerning it that the British decided to send settlers to Australia.

The first settlement was made in 1788, on the shore of the large natural harbor where Sydney is now located. Within a few years other settlements were made on the eastern and southeastern coasts of Australia. Find Sydney on the map on page 144 (*F5*) and then turn over to page 146 and study Figure 141.

AUSTRALIA
AND NEIGHBORING ISLANDS
PHYSICAL MAP
SHOWING NATURAL REGIONS
Scale of statute miles on the Equator
0 100 200 400 600 800 1000 1200
Lowlands and interior plains
Old, worn-down mountains
Plateaus
Young, rugged mountains
Boundaries of natural regions
Average summit elevations in natural regions indicated thus: 500 to 1000 ft.
INDIAN OCEAN
PACIFIC OCEAN
TASMAN SEA
CORAL SEA
AUSTRALIA
WESTERN PLATEAU
GREAT SANDY DESERT
GREAT VICTORIA DESERT
GIBSON DESERT
GREAT PLAINS
NULLARBOR PLAINS
EASTERN HIGHLANDS
GREAT DIVIDING RANGE
GREAT AUSTRALIAN BIGHT
CARPENTARIA
GULF OF CARPENTARIA
ARNHEM LAND
TASMANIA
NEW ZEALAND
NORTH ISLAND
SOUTH ISLAND
NEW GUINEA
MELANESIA
DUTCH EAST INDIES
JAVA
SUMATRA
CELEBES
BORNEO
SUNDA ISLANDS
SOLOMON ISLANDS
NEW HEBRIDES
NEW CALEDONIA
FIJI ISLANDS
GILBERT ISLANDS
Perth
Adelaide
Melbourne
Sydney
Canberra
Brisbane
Albany
Boulder
Darwin
Port Hedland
Broome
Townsville
Rockhampton
Cloncurry
Normanton
Alice Springs
Ayers Rock
Mt. Olga
Mt. Bruce
Mt. Russell
Mt. Stuart
Mt. Morgan
Mt. Bulloo
Mt. Barkly
Mt. Lindsay
Mt. Kosciusko
Mt. Wilhelmina
Mt. Carstenz
Mt. Albert Edward
Mt. Cook
Mt. Egmont
Mt. Ruapehu
Mt. Tongariro
Mt. Ngauruhoe
Mt. Tarawera
Mt. Taranaki
Mt. Hikurangi
Mt. Ruahine
Mt. Egmont
Mt. Aspiring
Mt. Tasman
Mt. Sefton
Mt. Fuji
Mt. Semeru
Mt. Kinabalu
Mt. Chimborazo
Mt. Aconcagua

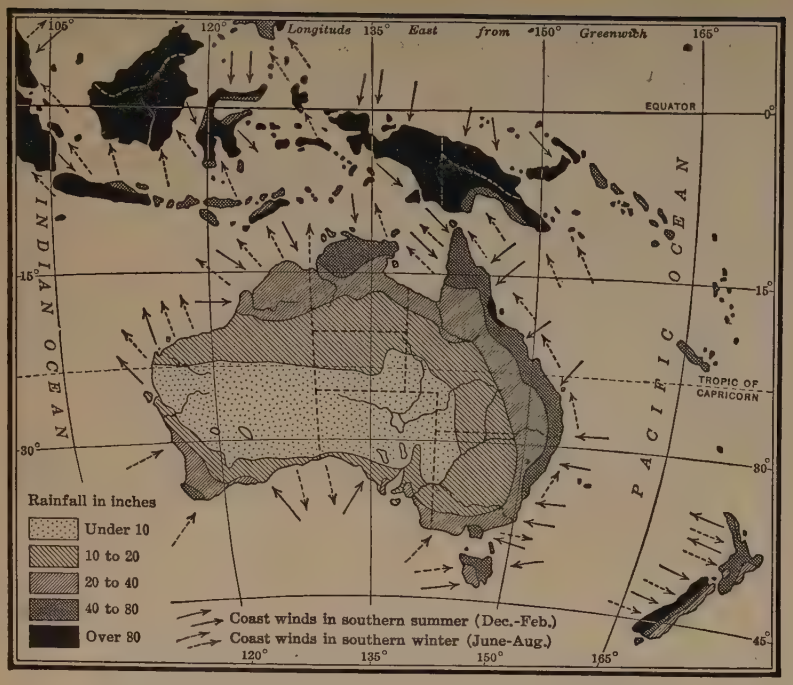


Figure 139. Distribution of rainfall in Australia.

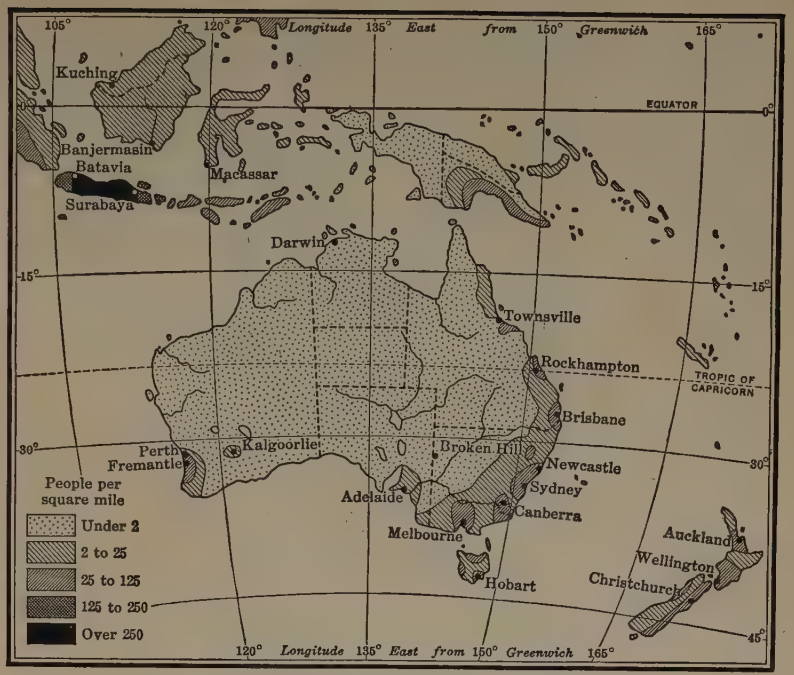


Figure 140. Distribution of people in Australia.

MAP STUDIES

Group I

1. What part of Australia is in the tropics? 2. What part is in the south temperate zone? 3. Where in Australia do you find the highest mountains? 4. What kind of mountains are they? 5. What mountains in the United States are of the same kind? 6. Find Mount Kosciusko, the highest peak in Australia (*E5*). How high is it?

7. What does Figure 139 show about the rainfall along the eastern coast of Australia? 8. What region lies west of the eastern highlands? 9. How does the rainfall of that region compare with the rainfall along the eastern coast? 10. What reason can you suggest for the difference? 11. What do you think is probably the most difficult problem which the farmers of the Great Plains of Australia have to solve?

12. Find the Murray and Darling rivers (*E5*). 13. These two rivers and their tributaries form the only great river system of Australia. What use do you think the people probably make of them? 14. What region lies west of the Great Plains? 15. What can you tell about that region by comparing the physical map with the rainfall map?

Group II

1. What does Figure 140 show about the number of people in the greater part of Australia? 2. What parts of the continent are most densely populated? 3. Do most of the people live north of the tropic of Capricorn or south of it? What reason can you give for this fact?

Group III

1. What parts of Australia have over 40 inches of rain a year? 2. What parts of the coast have less than 20 inches? 3. About how much of Australia should you say has too little rain for agriculture without irrigation?

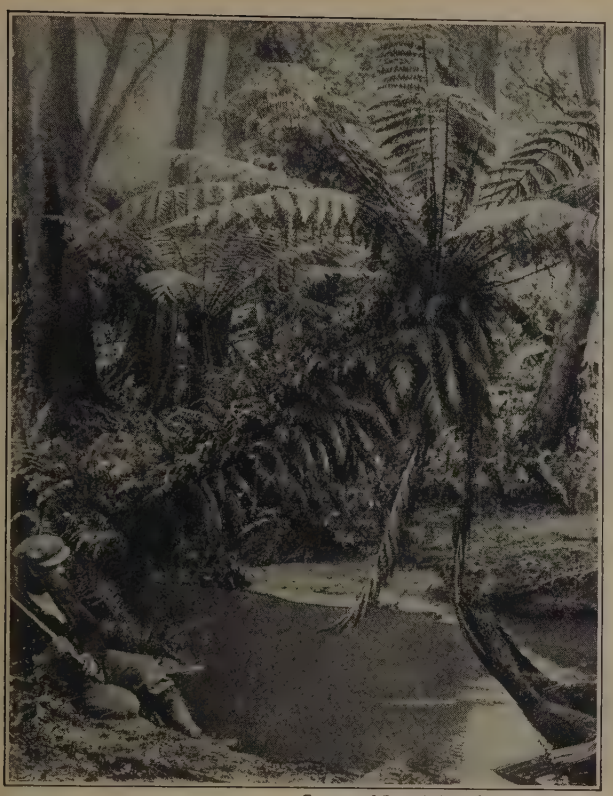
Figure 141. Part of the harbor of Sydney. The harbor is large and very deep, and is well protected from stormy winds and waves from the ocean, for it is nearly surrounded by hilly land. In the picture find three ocean ships, and some small ferryboats which carry passengers back and forth across the harbor.

The native people. The British settlers found themselves in an almost empty continent. The few natives were black-skinned people who lived chiefly by hunting and by digging up the roots of plants which they could eat. There are still some of these "blackfellows," as the British call them, left in Australia, but they live in the interior of the continent and are never seen by visitors to the coastal cities.

The native plants and animals. The British also found themselves in a land of strange plants and animals. There, for the first time, they saw tree ferns and forests of tall eucalyptus trees such as are shown in Figures 142 and 143. There too they discovered the animals that are known as "marsupials," which carry their young in pocketlike pouches on the under side of the body. The kangaroo is the marsupial which we know best.

Changes made by the settlers. In the eastern part of Australia the settlers found land suitable for raising crops and live stock; and as time went on, more and more people came from Great Britain to make new homes in the island continent. They brought wheat and other grains from the homeland, and all the common domestic animals — sheep, cattle, horses, pigs, and poultry. Little by little they turned the regions where they settled into farms and ranches. *See Figure 144.*

The rabbit pest. Unfortunately, some of the settlers brought rabbits with them. Rabbits have no natural enemies among the animals of Australia, and so they increased very fast. Soon they began to give the farmers great trouble, for they ate the crops in the fields and the grasses in the pastures. They even destroyed new orchards by eating the bark of the young trees.



Courtesy of Commissioner for Australia, N. Y.

Figure 142. Tree ferns in Australia. Nowhere else in the world do ferns grow so large and tall as they do in the moist eastern part of the island continent.

Courtesy of Commissioner for Australia, N. Y.

Figure 143. Eucalyptus trees in Australia. The largest of these trees grow to heights of over 200 feet, like some of the evergreen trees in our Western forests.

The people of Australia have tried all kinds of ways to get rid of the rabbits, but they are still a great pest. Many of the farmers and stockmen have built wire fences all around their fields and pastures to keep the rabbits out, and many employ "rabbiters" to shoot, poison, and trap these destructive little animals.

The discovery of gold. In 1851 gold was discovered in eastern Australia. This led to a series of "gold rushes," and during the next ten years more than half a million men hurried to Australia, hoping to make their fortunes in the gold fields. Although millions of dollars' worth of gold were obtained within a few years, many of the gold-seekers had no success. In time they gave up the search, and many, instead of going home, remained in Australia to become farmers or to raise live stock. Thus the discovery of gold helped greatly to increase the population of Australia.

The growth of the early settlements. The early settlements in Australia were along the coast, and the first towns grew up where there were good harbors. The most important of these towns were Sydney, Melbourne, Adelaide, Brisbane, and Perth. Today these are the largest cities of Australia, and each one is the capital of an Australian state. Find each one of them on the map on page 153 and name the state of which it is the capital. Find also North Australia, Central Australia, the island of Tasmania, and Papua, in the island of New Guinea. Tasmania is a state of Australia, and North Australia, Central Australia, and Papua are territories. Before the World War the part of New Guinea north of Papua, with the neighboring islands, belonged to Germany.

Courtesy of Intelligence and Tourist Bureau, Adelaide, South Australia

Figure 144. A flock of sheep on a ranch in the state of South Australia. The ancestors of the best Australian sheep were brought from England in 1797. How long ago was that? The Australian ranches are very large, and on some of them there are more than 100,000 sheep. For what three different purposes are sheep raised?

Since the war the Australians have had charge of the government of these lands.

The formation of the commonwealth. The states of Australia were for many years separate British colonies. But as time went on, the people felt that a central government would be of great benefit to all, and in 1901 the Commonwealth of Australia was formed, including the entire continent and the island of Tasmania. As you know, the commonwealth is a self-governing British dominion.

The capital city. When the commonwealth was formed, Sydney and Melbourne, the two largest cities, both wished to be the capital of the country. To settle the question, a beautiful location in the mountains between Sydney and Melbourne was chosen for the capital and named Canberra. There was no settlement there, and so a whole new city was laid out. Much remains to be done before the capital will be finished, but some of the government buildings have been built, and the Australian parliament now meets there. *See Figure 145.*

Giving explanations. Give an explanation for each of the following statements:

1. The Dutch were the discoverers of Australia, but the British were the first to settle there.
2. The first settlements in Australia were along the eastern and southeastern coasts.
3. The British settlers made better use of the land than the natives had ever made.
4. The population of Australia increased very fast in the ten years following 1851.

Something to do. Turn to page 384 and make a list of the five largest cities of Australia with their populations. Add the populations, and then make a statement telling about what proportion of the people of Australia live in the five largest cities.

2. Climate and Distribution of People

There is no land in the world where the climate has more to do with the distribution of people than it has in Australia. Do you know why? Begin your study of this problem by working out the map studies in Group II on page 145.

After your study of the map the following statements will not surprise you:

1. More than nine tenths of all the people of Australia live south of the tropic of Capricorn.

2. Four fifths of all the people live within 100 miles of the sea on the eastern, southeastern, and southwestern coasts.

Keep these facts in mind as you read this section, and be on the watch for reasons to explain them.

Courtesy of Commissioner for Australia, N. Y.

Figure 145. The Parliament House in Canberra. Here representatives from the Australian states meet to carry on the government of the country just as our Congress meets in the Capitol at Washington.

The tropical north and the temperate south. You have learned from the maps that the northern part of Australia is in the tropics, while the southern part is in the south temperate zone. Because of this the lowlands at the north are hot lands, while those at the south are much cooler and have frosts during four or five months of the year.

Seasonal temperatures. During January, which is the warmest month in the Southern Hemisphere, the average temperature of most of Australia is over 80°, and in places it is over 90°. Along the southern border it drops to 70°, and in the island of Tasmania to 62°.

In July, the coldest month, the temperature is about 70° along the northern margin of the continent, about 50° along the southern margin, and about 40° in Tasmania. In the south, where frosts occur, the winter temperatures drop at times to 32° or less.

The summer and winter temperatures in southern Australia show that the temperate part of the continent has no great extremes of heat or cold. The winters are much milder there than in the Northern states of our country, and snow seldom falls except in the highest parts of the mountains. The summers are warm, but the weather is seldom uncomfortably hot.

Explain now why most of the people of Australia live in the southern part of the continent. Remember the race to which nearly all the people belong.

Differences in rainfall. Turn to page 145 and work out the map studies in Group III. These will show you that Australia is a land with great differences in rainfall.

Why the interior of Australia has little rain. The map shows that about two thirds of Australia has less than 20 inches of rain. Winds from the ocean bring rain to certain parts of the coast; but since they give up most of their moisture there, the interior of the continent is dry.

The arid Western Plateau. Most of the great desert of Australia is in the Western Plateau. Vast stretches of this region are sandy deserts, and most of the remainder has no vegetation except the poorest of desert shrubs. People cannot live in the desert sections unless they get everything they need from outside, and so there are hundreds of square miles of the plateau without a single

inhabitant. In places there are mountains rising above the surface of the plateau. They cause the winds to give up enough moisture so that on their windward sides (the sides toward the wind) there is enough vegetation for a few people to make a living by raising sheep.

Toward the north in the plateau, where there is more rain, there are savannas suitable for raising cattle, but few settlers have chosen to live there. Explain why.

Some arid coast lands. The very dry part of Australia extends to the central part of the western coast, and to the shore of the Great Australian Bight (or Bay) on the south. Therefore these coast lands are almost as thinly populated as the dry interior.

The monsoon rains. The extreme northern part of Australia is a monsoon land, and the heavy rains there are brought by monsoon winds. You will remember that the monsoon winds which bring rain to India blow from the southwest during the northern summer, when the interior of Asia is very warm. The monsoons that bring rain to northern Australia blow from the northwest during the southern summer, when the interior of Australia is very warm. They bring much rain to the northern coast because they come from the ocean.

Turn to Figure 139 on page 145 and find the arrows that stand for the wet monsoons of northern Australia. Find also the arrows that show the direction of the winds in northern Australia during the southern winter. Notice that these are winds from the southeast. Since they blow outward from Australia, they are dry monsoons, and so, during the winter, northern Australia has little rain.

After your visit to India, with its millions of people, you might well expect the monsoon region of Australia to be densely populated. But, as Figure 140 (p. 145) shows, it is one of the very thinly populated parts of the continent. That is because nearly all the people of Australia belong to the white race, and white people find it very hard to do out-of-door work such as farming in the heat of the monsoon climate. So long as the Australians refuse to allow people of the darker-skinned races to settle in their country, the monsoon region will remain thinly populated.

Rain from the southeast trades. The abundant rain on the eastern coast of Australia is brought chiefly by the southeast trade winds, which come from the Pacific Ocean. As they reach the land and are forced to rise they give up much moisture on the seaward side of the eastern highlands. They blow steadily throughout the year, and so the eastern coast has rain at all seasons, and is well suited to farming. For this reason it is one of the most densely settled parts of the continent.

Rain from the westerlies. The southwestern corner of Australia and the southern coast between Adelaide and Melbourne are regions of winter rain and summer drought. Like the southwestern corner of Africa, they extend far enough south to have the westerly winds in the southern winter, when all the wind belts migrate northward. The westerlies, coming from the Indian Ocean, bring rain.

The first rains usually come in May and the last in October, but July is the rainiest month. In the summer the winds that blow over these two regions come from the land and bring little moisture. Thus the six months beginning with November and ending with April are very dry.

Tasmania is far enough south to have winds from the west throughout the year, and so it has rain at all seasons.

Like the temperate section of the eastern coast, the coastal regions which have rain from the westerlies are densely populated, for the climate is healthful for white people and the moisture is sufficient for farming.

Courtesy of Commissioner for Australia, N. Y.

Figure 146. Threshing wheat in southwestern Australia. Notice the wagonloads of wheat, the threshing machine, and the wagon loaded with bags of grain. Australian wheat is winter wheat, planted in the autumn and harvested in the late spring or early summer. What are the autumn months in Australia? the spring months?

Something to prove. Prove that you understand the climate of Australia and its effect on the distribution of population by completing each sentence below correctly:

1. Temperatures grow cooler from north to south in Australia because _____.
2. The extreme northern part of Australia has heavy rain in the southern summer because _____.
3. The monsoon region of Australia is thinly populated because _____.
4. The eastern coast of Australia has rain at all seasons because _____.
5. Tasmania has rain at all seasons because _____.
6. Southwestern Australia and the southern coast between Adelaide and Melbourne have winter rains and summer drought because _____.
7. The eastern, southeastern, and southwestern coasts of Australia are the most densely populated parts of the continent because _____.
8. The interior of the continent is very dry because _____.
9. Very few people live in the interior because _____.

3. Work in the Well-Populated Regions

Before you read this section, turn to the map on page 153 and find the parts of Australia where you might expect to see the people doing the following kinds of work:

raising wheat	raising sugar cane
growing fruit	mining metal ores
mining coal	raising live stock

Judging from the map, what regions of Australia do you think provide the most products for export to distant lands?

Southwestern Australia

The southwestern corner of the continent. The winter rains from the westerly winds save the southwestern corner of Australia from being a desert, and make it possible for many people to live there. The well-watered region includes the narrow coastal lowland and the bordering part of the plateau.

How work varies with rainfall. Figure 139 (p. 145) shows that the rainfall in southwestern Australia is heaviest along the coast and grows less and less farther inland. Thus

Courtesy of Tourist and Publicity Bureau, Perth, Western Australia

Figure 147. A view of one of the gold mines at Kalgoorlie, in Western Australia. Kalgoorlie is a town of about 5000 people, and its prosperity depends wholly on gold-mining. Why is there no farming or sheep-raising in this part of Australia?

there are distinct rainfall belts crossing this region, which have much to do with the work of the people.

In the coastal belt, where the rainfall is over 30 inches, most of the people carry on mixed farming and dairying. On the hillsides they have planted orchards and vineyards, and fruit is the leading export crop.

Farther inland, where the rainfall is from 15 to 25 inches, there is a winter-wheat belt; and still farther inland, where the land is too dry for wheat, there is a sheep-raising belt. Then comes the desert, which is too dry even for grazing. *See Figure 146.*

Perth and its seaport. The largest city and principal business center of southwestern Australia is Perth, which is twelve miles from the coast. This city is the western terminus of the only transcontinental railroad in Australia. Find the railroad on the map on page 153.

The seaport of Perth is Fremantle. Because of its location on the west coast of Australia, Fremantle is the first port of call for steamers from England. Find this seaport on the map on page 153 (*B5*) and name its leading exports.

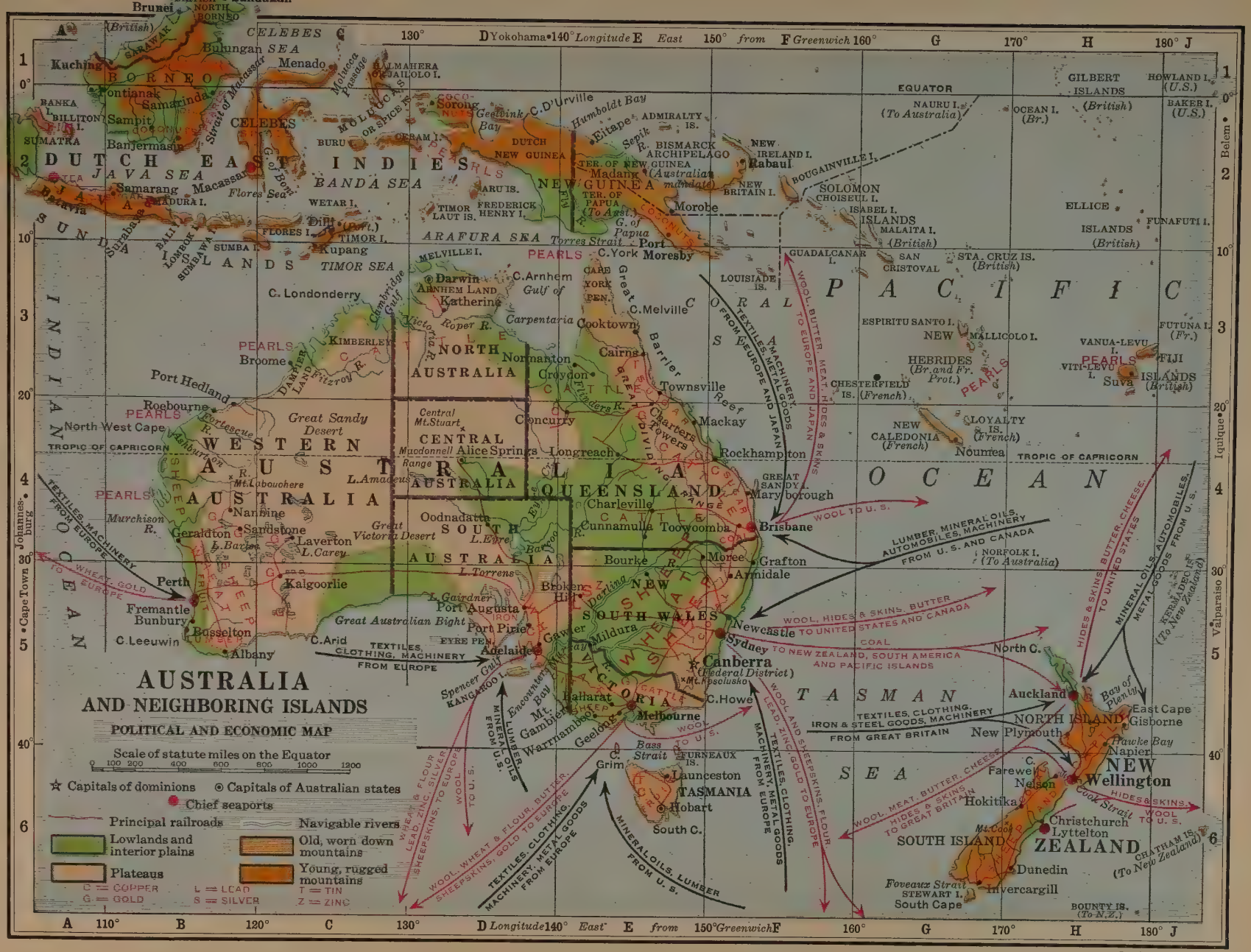
Gold-mining centers. The map shows that gold is one of the leading exports from Perth. Turn to the map on page 153 and find the places where the gold comes from. The gold-mining centers are the only towns of any importance in the great Western Plateau. *See Figure 147.*

At Kalgoorlie and the other gold-mining towns the greatest problem is to obtain food and water for the people. The region is much too dry for farming, and there are no streams to provide water for drinking or irrigation. When the mines were first opened, camels were used to bring supplies from the coast and to carry back the gold, but railroads have now been built. Water for the people of Kalgoorlie is pumped through pipes from a reservoir near Perth, nearly 400 miles away.

The Eastern Coastal Lowlands

The eastern coast of Australia. On the map on page 144 find the two lowland belts on the eastern coast of Australia. Which one is a tropical lowland? Which is a temperate lowland? Along the remainder of the coast the mountains come so close to the sea that the coastal lowlands are too narrow to be shown on the map. What have you learned about the rainfall on this coast? What kinds of work do you think are important here?

A mixed-farming region. The temperate coastal lowland of New South Wales is one of the best mixed-farming regions of Australia. As we travel through it, we shall see fields of corn, hay, alfalfa, and vegetables, and many herds of dairy cows. The region is especially well suited to dairying because the



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Courtesy of Commissioner for Australia, N. Y.

Figure 148. A dairy farm near the coast in New South Wales. Notice the farmer's house and farm buildings in the distance. Why does he not have a silo, as most dairy farmers in our country do? Why does eastern Australia provide good markets for dairy products?

mild climate allows the cows to graze out of doors at all seasons, and the abundant rain keeps the pasturage fresh and green throughout the year. *See Figure 148.*

In this region we shall also see many orchards of apples, peaches, plums, and pears, and other temperate-zone fruits, and many groves of orange trees. What do the orange trees tell about the danger of frost in the lowland?

The largest city of Australia. On the eastern margin of the temperate coastal lowland is Sydney, the largest city and leading seaport of Australia. Sydney has over a million people, and is one of the great cities of the world. Only three cities in the British Empire — London, Calcutta, and Bombay — are larger. Find Sydney on the map on page 153 (*F5*) and notice that it is the center of the railroad system of New South Wales. What reasons can you suggest for its growth?

Sydney owes its growth as a port to the fact that it has one of the finest harbors in the world and is an ocean gateway for much of the richest and most densely populated part of Australia. To its wharves come ships from all over the world, bringing goods to be distributed by rail to all parts of New South Wales and to other states of Australia. When the ships sail away, they carry Australian products which have come to Sydney for export. Name the leading exports by using the map on page 153.

On the hilly shores overlooking the harbor of Sydney you will see many fine houses and many attractive bungalows surrounded by beautiful gardens, and in the business section you will find office buildings, banks, and stores much like those in our own cities. Along the water front, near the wharves and docks, you will find large warehouses, and huge grain elevators where millions of bushels of wheat are stored, waiting to be shipped away. Here too you will see shipyards, flour mills, and many other kinds of manufacturing plants.

Photograph from Ewing Galloway, N. Y.

Figure 149. Part of the iron-and-steel plant at Newcastle. The blast furnaces here produce large quantities of pig iron, which is used in the manufacture of steel for many different purposes.

Courtesy of Commissioner for Australia, N.Y.

Figure 150. A farmer in Queensland gathering pineapples. Where in South Africa did you see pineapple plantations? What likeness is there between that part of South Africa and this part of Australia?

Courtesy of Commissioner for Australia, N.Y.

Figure 151. A fruit-grower in Victoria picking apples. What season of the year was it in the Northern Hemisphere when this picture was taken? What advantages of climate has Victoria for fruit-growing?

Coal and manufacturing. On the map on page 153 find Newcastle, north of Sydney (*F5*). The best coal in Australia is mined between Sydney and Newcastle, and it has helped to make both cities manufacturing centers. At Newcastle there is a large iron-and-steel plant to which iron ore is brought from South Australia. Iron and steel from this plant are used in railroad repair shops, machine shops, and shipyards at Sydney. *See Figure 149.*

A tropical farming region. On the tropical coastal lowland of Queensland there are sugar plantations which supply most of the sugar needed by the Australians. The people of this region also raise corn, rice, and many tropical fruits such as pineapples and bananas. *See Figure 150.*

This hot, moist lowland is suitable for all kinds of tropical crops, for which there is a good market in temperate Australia. Land is cheaper here than farther south, yet the region is much less densely populated than the coastal lowland of New South Wales. Can you explain why?

The capital of Queensland. On the map on page 153 find Brisbane, the capital and largest city of Queensland (*F4*). Notice that it is near the southern boundary of Queensland and is the chief seaport and railroad center of that state. Why do you think the largest city of Queensland has grown up here rather than farther north on the coast? Judging from the exports of Brisbane, what do you think is the most important kind of work in southern Queensland?

Along the water front at Brisbane you could visit meat-packing plants, and in a neighboring town you could visit woolen mills. These manufacturing plants should make you feel still more sure that your answer to the question in the last paragraph was correct. Explain why.

The Valley of Victoria. On the map on page 144 find the Valley of Victoria, in which the great city of Melbourne is located (*E5*). This valley has a mild, pleasant climate with sufficient rain for farming and is one of the more densely populated regions of Australia. The eastern part is chiefly a dairying section,

Australian Government Photograph

Figure 152. An airplane view of Melbourne, showing the railroad yards and the river which flows through the city into the bay. The business district is at the left, and the manufacturing district is across the river, at the right. What advantages has Melbourne for manufacturing?

while the western part is used more largely for raising beef cattle and sheep. Large quantities of wheat and fruit also are raised in the western section. *See Figure 151.*

Judging from the work of the people in the Valley of Victoria, what do you expect the leading exports of Melbourne to be? Check your answer by the map on page 153.

The capital of Victoria. Melbourne is the second largest city of Australia, and has nearly a million people. The map shows that it is located at the inner end of a large bay which extends far into the Valley of Victoria, and that it is the center of the railroad system of the state. Thus it is the ocean gateway not only for the valley but also for the southern part of the Great Plains, beyond the Victorian Highlands. *See Figure 152.*

Melbourne, like Sydney, is a manufacturing center. Among its manufactures are mining machinery, farming tools and machinery, and railroad locomotives and cars. Can you explain why these industries have grown up in Melbourne?

A travel test. 1. If you were to travel from Perth to Kalgoorlie on the train, you would cross the rainfall belts of southwestern Australia which so largely determine the work of the people. Arrange the phrases below in the order in which you would see the things they describe.

wheat farms
sheep ranches
useless desert lands
gold-mining centers
dairy farms and fruit orchards

2. Give reasons why the people of each belt carry on the kind of work which you have observed there.

Some things to explain. Give an explanation for the fact that

1. More immigrants, or new settlers, in Australia choose to live in the coastal lowland of New South Wales and the Valley of Victoria than in the coastal lowland of Queensland.
2. The Valley of Victoria and the coastal lowland of New South Wales can support large numbers of people.
3. The state of Queensland supplies most of the sugar used by the Australians.
4. Brisbane, Sydney, and Melbourne are railroad centers.
5. Sydney is better located than Brisbane or Melbourne to serve as an ocean gateway for all parts of the more densely settled section of eastern Australia.
6. Sydney has become a leading manufacturing center in Australia.
7. The agricultural products of southwestern Australia are like those of the southwestern part of the Union of South Africa.

Courtesy of Commissioner for Australia, N. Y.

Figure 153. Australian lumbermen cutting down a giant tree. Notice the size of the trunk compared with the men.

Courtesy of Commissioner for Australia, N. Y.

Figure 154. Hauling logs from the forest to a sawmill in Queensland. Six or seven pairs of oxen are needed to pull three or four huge logs up and down the rough slopes and through the streams.

The Highlands of Eastern Australia

A mountain barrier. Like the Appalachian Highlands of our country, the East Australian Highlands and the Victorian Highlands form a barrier between the coast lands and the plains farther inland. It was some time before the early settlers found routes across the mountains to the interior of the continent, and much longer before railroads were built. Today railroads run from the seaports through the mountains to towns in the Great Plains.

Rainfall and forests. Since the seaward slopes of the mountains have much rain, they are covered with forests, and lumbering is carried on in many places. Many of the lumbering camps are far from the railroads, and the heavy logs have to be taken to the sawmills by ox-teams. Pines and other softwood trees grow in a few places in the highlands, but most of the forests are of hardwoods. For this reason Australia has to import softwood lumber from countries in the north temperate zone. *See Figures 153 and 154.*

Farming and stock-raising in the highlands. Between the ranges of the eastern highlands there are valleys and plateaus which provide fairly large stretches of level land and are used for farming. The principal crops that the farmers raise are the same as those we saw on the temperate coastal lowland,—grain, alfalfa, fruits, and vegetables. Dairying is very important, and the farmers send much butter to the coastal cities.

Many herds of beef cattle graze in the moister, eastern section of the mountains, providing large quantities of meat and hides for export. The drier parts are better for sheep than for cattle, and the thickest "sheep population" in Australia is on the western slopes of highlands in New South Wales and the northern slopes in Victoria.

Mineral wealth. It was the discovery of gold in the eastern highlands that led to the rapid increase in the population of Australia from 1851 to 1861. Less gold is now mined than formerly, for in places the ores have given out, but it is still an important product of the highlands. Turn to the map on page 153 and find the chief gold-mining centers in this region. What other metal ores are mined in the eastern highlands?

Courtesy of Commissioner for Australia, N.Y.

Figure 155. A portion of the famous silver-lead mines at Broken Hill in Australia. Find this mining center on the map on page 153 (*E5*) and name another kind of metal ore which is mined there.

By far the most valuable mineral product of Australia today is coal. Most of it comes from the field in New South Wales. This field contains more coal than any other field in the Southern Hemisphere. What do you find on the map on page 153 that shows that the Australians mine more coal than they need for their own use?

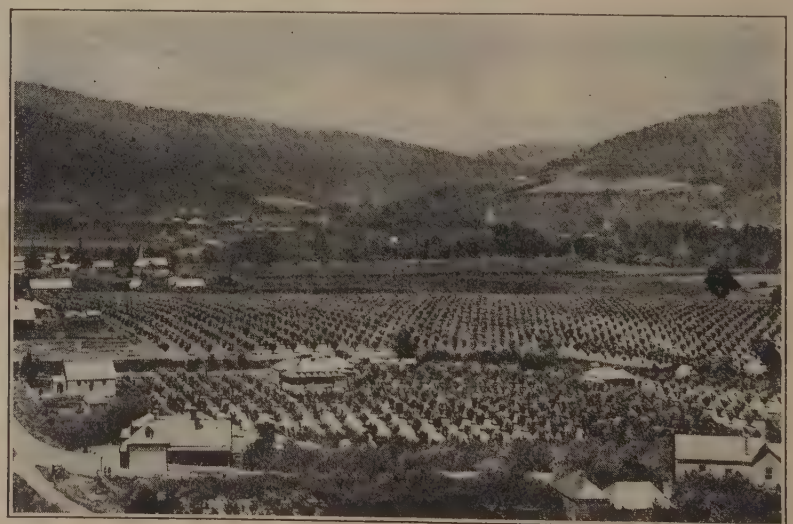
The South Australian Highlands. On the map on page 144 find the South Australian Highlands. Here, too, rich deposits of metal ores have been found. In the eastern part of the region is Broken Hill, where some of the richest silver-lead mines in the world are located. These mines have attracted so many people that Broken Hill has a population of more than 30,000. *See Figure 155.*

Farther south, near Spencer Gulf, there are rich copper mines, and at Iron Knob, on the opposite side of the gulf near Port Augusta, there is a whole hill of high-grade iron ore. The ore mined at Iron Knob is shipped to the iron-and-steel works at Newcastle.

In the valleys among the South Australian Highlands the people raise sheep and carry on mixed farming. In the southern part of the region the people raise much wheat and fruit.

The capital of South Australia. The capital and largest city of South Australia is Adelaide. It is a very attractive city, located a few miles inland on a small river which empties into a large bay. An outer harbor, beyond the river mouth, makes Adelaide a seaport. Find this city on the map on page 153 (*D5*). How is its export trade connected with work in the South Australian Highlands?

Tasmania. The island state of Tasmania is part of the eastern highlands of Australia, separated from the mainland by Bass Strait. Therefore the surface is hilly and mountainous. In the western part of the island, which is the more rugged part, there are several important mining centers. The tin mines are more valuable than any others, but ores of copper, silver, gold, and lead also are obtained.



Courtesy of Commissioner for Australia, N.Y.

Figure 156. Apple orchards in a valley among the mountains of Tasmania. At what season of the year in the Northern Hemisphere do apples shipped from Tasmania reach the markets in England?

Photograph from Ewing Galloway, N. Y.

Figure 157. The zinc plant near Hobart, in Tasmania. This plant provides work for over 1000 men. It is located on the shore of the harbor of Hobart, and ships bring the zinc ores directly to its wharves from Adelaide. Find Hobart on the map on page 153 (*E 6*) and estimate the distance from there to Adelaide.

The "orchard state." You already know that Tasmania has plentiful rainfall from the westerly winds. As you would expect, most of the people live in the valleys, where the land is level enough for farming. Most of the farmers carry on mixed farming, and many raise apples as a special money crop.

So many apples are raised in Tasmania that it is often called the "orchard state" of Australia. Every autumn thousands of barrels of apples are shipped to England, where they bring a good price because they arrive at the season when the home supply of apples is low. All the fruit-growers of Australia enjoy this same advantage in sending fresh fruit to England. *See Figure 156.*

During the last few years the Australians have been using some of their fruit to make jams for export to England. This has proved to be a profitable business, for the British serve jams regularly at breakfast.

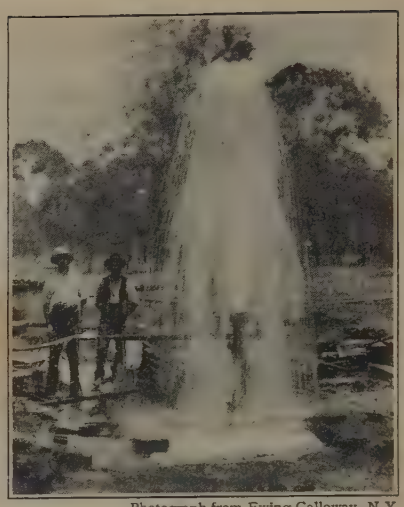
Hobart. Hobart, on the southeastern coast of Australia, is the capital, the largest city, and the chief seaport of Tasmania. In one of the suburbs of Hobart is the zinc plant shown in Figure 157. This is the largest plant in the world for refining zinc by means of electricity. Most of the zinc refined here comes from Broken Hill, and the electricity comes from a great hydroelectric plant in the north-central part of Tasmania. Can you explain what advantages Tasmania has for the making of electricity through the use of water power?

Making choices. From the sentences given below select those that you think give the most important reasons why many people have settled in the mountains of eastern Australia.

1. The mountains have a rough surface.
2. They have plentiful rainfall.
3. They are a natural barrier.
4. The mountains have much mineral wealth.
5. They have large stretches of forests.
6. Their scenery is beautiful.
7. The mountains have many rivers.
8. They are near the seacoast.
9. They are well supplied with railroads.

Courtesy of Commissioner for Australia, N. Y.

Figure 158. Part of a large flock of sheep on the Great Plains of Australia. Large numbers of the Australian sheep are of the kind known as Merino, and they produce the finest quality of wool.



Photograph from Ewing Galloway, N.Y.

Figure 159. Water coming from an artesian well 3500 feet deep, in the Great Plains of Australia.

4. The Great Plains of Australia

Turn to the map on page 144 and study the location of the Great Plains of Australia. Notice that they lie between the eastern highlands and the interior desert. What does Figure 139 tell you about the rainfall in this region?

Like our own Great Plains, the Great Plains of Australia are grasslands with few trees except along the streams. What kinds of work do you expect to find the people doing?

Cattle pastures. The thinly settled savannas in the northern part of the Great Plains are used chiefly as pastures for beef cattle. Most of the cattle of Australia, however, are found in the well-watered eastern highlands and in the temperate coastal lowlands.

Sheep pastures. The northern part of the Great Plains is too warm for sheep, but farther south on the plains and on the bordering slopes of the eastern highlands more sheep are pastured than in any other area of equal size anywhere in the world.

Nearly all the sheep ranches, or sheep stations, as they are called in Australia, are found where the yearly rainfall is between 10 inches and 30 inches. Many of the larger stations cover as much as 150 square miles, and altogether there are in Australia about 100,000,000 sheep. *See Figure 158.*

Problems of the sheep ranchers. There are no farmers or stockmen in the world who watch the weather more anxiously than the sheep ranchers of Australia. During a very dry year the grass withers, water is scarce, and the sheep die by thousands. Such conditions often mean ruin for many of the ranchmen. A year with good rainfall brings an abundance of grass and sufficient water, and these, in turn, mean prosperity for the ranchmen.

In the drier pasture lands the problem of getting enough water for the sheep is always serious. Fortunately, the ranchmen in most parts of the Great Plains can get water from beneath the ground by drilling deep wells. Some of the wells are *artesian wells,* which means that the water flows out of them without having to be pumped. Even the wells, however, sometimes fail to provide water in a very dry season. *See Figure 159.*

In the Great Plains the millions of rabbits give the ranchmen much trouble, for seven rabbits will eat as much grass as one sheep. Most of the pastures have to be fenced with

wire to keep the rabbits out, and the ranchmen employ men called "boundary riders" to keep the fences in good condition.

The importance of sheep-raising. Sheep-raising was one of the first kinds of work undertaken by the British settlers in Australia, and it is the leading industry of the commonwealth today. The sheep are raised for both wool and meat, though the wool is much the more important product. Australia is the leading wool-producing country of the world, and wool is by far its most valuable export.

Wheat lands. Among the farm products of Australia wheat is the most valuable export crop. The most important wheat lands are in the southern and southeastern parts of the Great Plains and on the lower slopes of the bordering mountains. The rainfall in these lands varies from 10 to 40 inches, and in the drier parts the farmers use dry-farming methods. When there is a little more rain than usual, the wheat farmers get larger crops; when there is less rain than usual, their crops are small. Thus their prosperity depends largely on the rainfall.

The Australian farmers do their plowing, planting, and harvesting with the best of modern machinery. They plant their seed in April and usually begin to harvest the grain late in December. Do they raise spring wheat or winter wheat?

About half the Australian wheat crop is used at home. The rest is exported, chiefly to Europe, and Australia stands fourth among the wheat-exporting countries of the world. Only Canada, the United States, and Argentina export more. *See Figure 160.*

Irrigated lands. On the map on page 153 find the plains along the lower course of the Murray River and its tributaries. These plains have less than 20 inches of rainfall, but they are becoming prosperous mixed-farming lands through irrigation. Water from

Courtesy of Commissioner for Australia, N.Y.

Figure 160. Loading wheat at a railroad station in the Great Plains of Australia. From the map on page 153 name the two seaports which lead in the export of wheat from eastern Australia.

artesian wells and also from the streams is used for this purpose. Plans for irrigating much larger areas have been made, and work is under way on three great projects for storing the waters of the Murray-Darling system in great reservoirs and carrying them to the farm lands through long canals.

Some things to explain. Explain why

1. Temperatures grow cooler from north to south in the Great Plains.
2. Rainfall grows less from east to west in the Great Plains.
3. The most important kind of work in the Great Plains is stock-raising.
4. More cattle than sheep are raised in the northern part of the Great Plains.
5. In the region as a whole, far more sheep than cattle are raised in the Great Plains.
6. Most of the sheep are found in the eastern and southeastern parts of the plains and on the bordering mountain slopes.
7. The wheat lands of the Great Plains are in the southern and southeastern parts of the region and on the lower slopes of the bordering mountains.
8. The prosperity of the sheep-raisers and the wheat farmers varies from year to year with the rainfall.

5. Manufacturing, Transportation, and Trade

Give what you think are the correct answers to the following questions, and check them as you read this section.

1. What advantages has Australia for the development of manufacturing?
2. What is the greatest handicap to transportation in Australia?
3. What kinds of work in Australia supply the leading exports?

The growth of manufacturing. Since Australia has coal and produces iron ore and other valuable raw materials, it is natural that the people should wish to use them to manufacture still more valuable products. Nevertheless manufacturing has grown rather slowly. At present the leading industries are those which prepare raw materials for home use and export, such as meat-packing, butter-making, and the refining of ores, and those which supply products which all the people of the country need, such as the making of clothing and shoes.

The greatest handicap to manufacturing is the small population of the country, for a small population means a small home market for all manufactured products except those which everyone uses. That explains, for example, why Australia has no automobile factories and why the people do not manufacture many kinds of heavy machinery. With its abundant coal and its iron ore and other raw materials Australia is well equipped to become a manufacturing country. But the growth of manufacturing will depend on the growth of the home markets, and therefore on the growth in population.

The railroads of Australia. You have discovered from the map that each of the more important states of Australia has a railroad system which centers in the capital city on the coast, and that a few railroads in the east extend across the highlands into the Great Plains. The interior of the continent has almost no railroads, and there is only one transcontinental line.

The transcontinental railroad connects the state railroads of South Australia with those of Western Australia, making it possible to travel all the way from Perth to cities on the eastern coast by train. This railroad, as you know, runs across the southern part of the desert of Australia, and there is a stretch of 1000 miles where it does not cross a single permanent stream. In this stretch the problem of getting water for the locomotives and passengers is very difficult.

The Australians are now building another transcontinental railroad from north to south through the heart of the continent. It starts at Port Augusta in South Australia, and when completed will run to Darwin, the capital of North Australia. Look on the map on page 153 and see how much of this railroad has been completed.

A handicap to railroad transportation. Travel and transportation by train in Australia are slower than in Europe or the United States because the railroads of the different states do not use the same gauge. That means that the rails of the different lines are not the same distance apart. Some of the railroads have a narrow gauge of 3 feet, 6 inches; others a "standard gauge" of 4 feet, $8\frac{1}{2}$ inches, as we do in the United States; and still others a broad gauge of 5 feet, 3 inches.

These differences are unfortunate, for locomotives and cars built for one gauge cannot run on rails of another gauge. At the places where the gauge changes, passengers have to change cars, and freight has to be unloaded from the cars of one line and loaded on those of another.

Transportation by air. Since so much of Australia is without railroads, it is natural that the people should be much interested in

Australian Government Photograph

Figure 161. A storage warehouse for wool at Adelaide. Here wool from many far-away ranches is stored and inspected before it is shipped to distant countries.

Australian Government Photograph

Figure 162. A ship from London being loaded with bales of wool at Brisbane. To what cities in England is the wool likely to be sent after it reaches London?

the use of airplanes for transportation. Already they have established regular airplane service to connect places on the west coast with Perth, and places in the Great Plains with railroads that run to the eastern seacoast.

The trade of Australia. From the map on page 153 make a list of the leading exports of Australia. Which ones come from the ranches and farms? Which ones come from the mines? Which are foodstuffs? Which are raw materials?

Wool, wheat, butter, meat, hides and skins, and other products of the ranches and farms are the most valuable exports, and gold, lead, zinc, and other products of the mines are next. These raw materials and foodstuffs go largely to Great Britain and other countries of western Europe and to the United States. Explain why.

Now study the imports of Australia. What do the Australians buy in large quantities from our country? from Great Britain and other European countries? What country of Asia supplies some of the imports?

It is clear from the imports that the things that the Australians need most from distant lands are manufactured goods. They need also gasoline and other mineral oils, for as yet no petroleum has been discovered in this continent. Why do they need lumber?

Trade with the home country. You will probably not be surprised to learn that Great Britain takes about two fifths of the exports of Australia and supplies about one third of the imports. The home country finds in the commonwealth a very valuable source of raw materials for its factories and of foodstuffs for its people, and a good market for some of its manufactured goods. *See Figures 161 and 162.*

Lands to the North governed by Australia

New Guinea and the neighboring islands. On the map on page 153 find the part of New Guinea which is governed by the Australians. The Bismarck Archipelago and several other islands east of New Guinea are also under Australian control. Most of the people of these tropical lands are dark-skinned natives who live largely on bananas, coconuts, and other tropical fruits, and on vegetables which they raise in small gardens. There are also a few Europeans, who are interested in developing coconut plantations and rubber plantations.

Matching cities and states. Each place named in the left column below is the capital and largest city of one of the Australian states named in the right column. Match the cities with the states correctly.

Sydney	Western Australia
Melbourne	Queensland
Adelaide	Tasmania
Brisbane	New South Wales
Perth	Victoria
Hobart	South Australia

A selection test. Select the word or phrase which makes each statement below correct:

1. The two most important kinds of work in Australia are

mining and manufacturing.
fishing and lumbering.
stock-raising and farming.

2. The animals raised in largest numbers in Australia are

sheep. pigs. cattle.

3. The leading grain crop of Australia is

corn. wheat. oats.

4. The most valuable mineral product is

gold. coal. lead.

5. The leading exports of Australia are products of the

mines. ranches and farms. forests.

6. The most valuable export of all is

wheat. butter. wool.

7. The imports of Australia are chiefly

manufactured goods. foodstuffs. raw materials.

Some things to explain. Explain why

1. The British buy large quantities of wool and wheat from Australia.
2. Fresh fruit and fruit jams from Australia find a good market in Great Britain.
3. Most of the Australian imports from Great Britain are manufactured goods.
4. Most of the imports of mineral oils are from the United States.
5. The Australians trade more largely with the British than with any other nation.

Sentences to complete. 1. Stock-raising is more important than farming in Australia because much of the well-watered land is _____, and much of the level land is too ___ for crops.

2. The prosperity of the people of the Great Plains of Australia varies from year to year with the _____ because _____.

3. Vast stretches of the interior of Australia will always be useless lands because _____.

4. The tropical northern part of Australia is likely to remain _____ populated unless _____ _____.

5. Airplane transportation will probably become very important in Australia because _____ _____.

Can you explain these differences? 1. Read the following comparisons carefully:

a. Australia is almost as large as the United States.

b. The United States has about

(1) twenty times as many people as the Commonwealth of Australia;

(2) twenty times as much land used for raising crops;

(3) ten times as many miles of railroads;

(4) seven times as many dollars' worth of foreign trade.

2. Explain why Australia has much more land unsuited to farming than the United States has. Do you think that Australia will ever be able to support as many people as the United States does? Give reasons for your answer.

3. Explain why the railroad mileage of Australia is so much less than that of the United States. Do you think the interior of Australia will ever be covered with a network of railroads, as the interior of the United States is? Give reasons for your answer.

4. The fact that Australia, with about one twentieth as many people as our country, has about one seventh as much foreign trade shows that the Australians depend more largely on foreign trade than we do. What does that suggest about their ability to supply their own needs compared with our ability to supply our needs? What reasons can you give for this difference?

Courtesy of Wellington Harbour Board

Figure 163. Ships in the harbor of Wellington. Here you will see boats from other parts of the islands of New Zealand, as well as ships from distant lands. Although Auckland carries on more foreign trade than Wellington, this city is the more important center for trade between different parts of New Zealand. In what way is its location better for this domestic, or home, trade than is the location of Auckland?

VI. THE DOMINION OF NEW ZEALAND

Foreword. At Sydney we can board a ship which will carry us almost directly east to Auckland, the largest city of the British dominion of New Zealand. The distance from Sydney to Auckland is 1280 miles, or about one third of the distance from New York to London. Trace our route on the map on page 153. In the harbor at Auckland we shall see ships from Great Britain, and probably some from the United States and Canada, for most of the New Zealanders are of British descent and trade chiefly with the English-speaking people of the world.

To the people of the British Isles the islands of New Zealand are the "antipodes," which means that these islands are on the opposite side of the earth from the British Isles. Use your globe to prove that these two groups of islands are the antipodes to each other.

Turn to page 52 and compare New Zealand and the British Isles in size and population. What can you say about the density of population in these two groups of islands?

As you read this chapter keep the following questions in mind:

1. Why have people from the British Isles chosen to settle in New Zealand, on the opposite side of the earth?

2. Why are the islands of New Zealand so much less densely populated than the British Isles?

3. How do the British people in New Zealand and the British people in the homeland help to supply each other's needs?

Figure 164. A valley among the snow-capped mountains of South Island, New Zealand. Of what mountains in Europe do these mountains of New Zealand remind you?

1. A Favorable Land for Settlement

The map on pages 382–383 shows that Captain Cook visited New Zealand as well as Australia. It was not until 1840, however, that the British made their first settlement in New Zealand. Do you know why the settlers were pleased with their new home, and what people they found living there?

Wellington — the first settlement. For their first settlement the British chose a place with an excellent harbor on Cook Strait, which separates the North Island of New Zealand from the South Island. This settlement was named Wellington, and today it is the second largest city of New Zealand and the capital of the dominion. It is also an important seaport. Find Wellington on the map on page 153 (*H6*) and study Figure 163.

Other cities. Auckland, farther north on North Island, is a larger city than Wellington, chiefly because it is the nearest port of call for ships from Sydney and from ports on the western coast of Canada and the United States. About two thirds of all the trade of New Zealand is carried on through Wellington and Auckland.

The largest city on South Island is Christchurch, on the east coast. Much of the trade of South Island is carried on through Lyttelton, the port of Christchurch. Find these two cities on the map on page 153 (*H6*), and notice the railroads which connect them with other parts of the island.

The native people. Although we shall see mostly people of British descent as we travel through New Zealand, we shall also see many Maoris, as the natives are called. They are tall and strong, with light-brown skin and wavy black hair, and they are far more intelligent than the blackfellows of Australia. They make up about one twentieth of the population of New Zealand, and they carry on farming and stock-raising much as the white people do.

A mountainous country. You will see from the map that both islands of New Zealand are made up largely of young, rugged mountains. There are, however, lowland plains bordering the coast in several places, and among the mountains there are many small but fertile plains. *See Figure 164.*

The mountains of South Island are so rugged and so beautiful that they have been named the Southern Alps. They are not so high as the Swiss Alps, but their summits are snow-capped, and from the snow fields great glaciers extend far down the slopes. Swift-flowing streams with many waterfalls also add to the beauty of the mountains.

The highest peak is called Mount Cook in honor of Captain Cook, and the largest glacier is named Tasman Glacier for the Dutch ex-

plorer who first sighted the islands. This glacier is about two miles wide and over eighteen miles long, and is thought to be the largest mountain glacier in the world.

The mountains in North Island are lower than the Southern Alps, and among them are a number of volcanic peaks. Some of the volcanoes are dead, while others are still alive. Around the margins of the volcanic mountains are geysers and hot springs like those in Yellowstone National Park. *See Figure 165.*

A favorable climate. Do you remember why the British Isles have a mild climate with no great extremes of heat or cold? New Zealand has a mild climate for the same reason. On the lowlands and the lower slopes of the mountains the winters are never very cold, and uncomfortably hot weather in summer is unusual. If you cannot give the explanation for the mild climate, review what you learned on page 68.

Like Tasmania, New Zealand is far enough south to receive the moist westerly winds at all seasons, and so there is rain throughout the year. On which side of the islands should you expect the rainfall to be heavier? Why? Check your answer by Figure 139 (p. 145).

Figure 139 shows that the heaviest rainfall of all is on the western side of South Island, where the winds are forced to rise to cross the highest mountains of the country. This part of New Zealand has over 80 inches of rain a year. The eastern side of the island is not so well watered. The rainfall there is from 20 to 30 inches, and some of the farmers find it necessary to irrigate their fields with water from streams which flow eastward from the mountains.

Forests and grasslands. Because so much of New Zealand has heavy rainfall, it has large stretches of forests, and the parts of the islands that are cool as well as moist have pine trees and other softwoods which provide valuable lumber for building purposes.

Herbert Photos, Inc.

Figure 165. A geyser in North Island, New Zealand. This geyser spouts hot water and steam high into the air almost continuously, day and night.

The eastern side of South Island and the parts of North Island which have the least rain are chiefly grasslands. The native grass is coarse and wiry and makes poor pasturage; so the people have burned over the grasslands, plowed them, and planted good grass seed imported from England. Thus they have turned poor grasslands into rich pastures where large numbers of cattle and sheep can graze.

Finding likenesses. Sum up the likenesses between New Zealand and Great Britain by completing the following sentences:

1. New Zealand and Great Britain are both small _____ countries, separated from the nearest continents by _____.
2. They are both in the _____ zone.
3. They both have a mild _____ because _____.
4. They both have abundant _____ because _____.
5. They are both healthful lands for white people because _____.

Finding differences. Now make as long a list as you can of ways in which New Zealand is different from Great Britain. Keep this list and add to it as you read more about the Dominion of New Zealand.

Photograph from Ewing Galloway, N.Y.

Figure 166. Shearing sheep in New Zealand. The men are using shears run by electricity to clip the thick wool from the sheep. The shearing is done in the spring, after the cold weather is over. Why?

2. The New Zealanders and their Work

From what you have learned about New Zealand, what kind of work do you think is most important there? Study the exports shown on the map on page 153 and see whether or not you wish to change your answer.

The raising of live stock. So much of New Zealand is hilly and mountainous that it is better suited to grazing than to farming, and the raising of live stock is by far the most important kind of work. The climate is so mild that the grass grows at all seasons and the sheep and cattle can graze out of doors the year round.

Sheep and beef cattle. The ranchmen raise far more sheep than cattle, partly because sheep can graze on rougher land, and partly because sheep's wool grows thick and fine in the climate of New Zealand. As in Australia, the sheep are raised partly for meat, but chiefly for wool. *See Figure 166.*

The sheep thrive best where the rainfall is less than 50 inches, and so the sheep stations, or ranches, are mostly on the eastern side of the islands. Figure 167 is a picture of one of them.

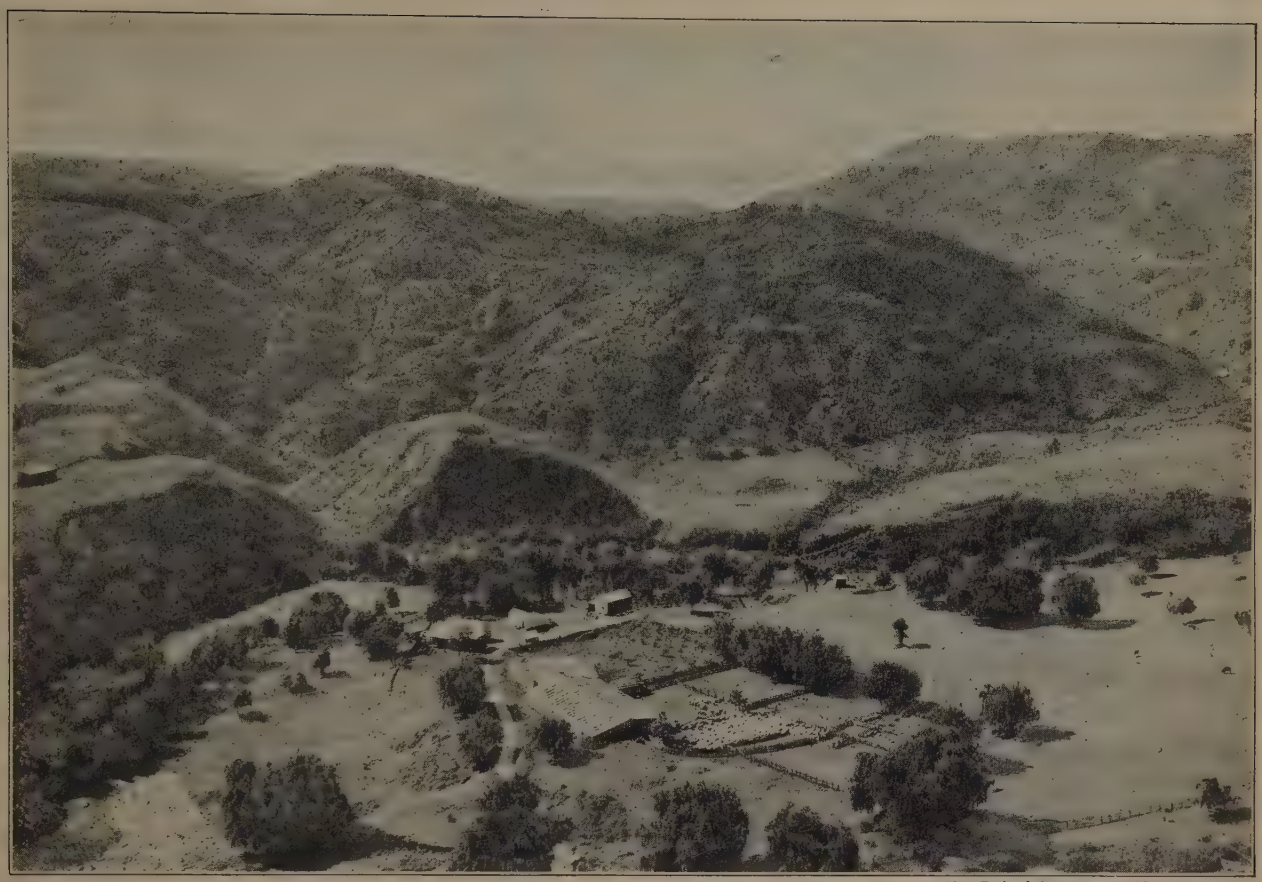
The ranches where beef cattle are raised are mostly on the well-watered lowlands and lower hillsides, and there are far more in North Island than in South Island. What export products do the cattle ranches provide?

Dairying. In recent years the people of New Zealand have been giving more and more attention to dairy farming, and they now produce large quantities of butter and cheese for export. Many of the dairy farmers raise special fodder crops to make the cows give more and better milk. *See Figure 168.*

What "refrigerator ships" mean to New Zealand. In the days before there were "refrigerator ships" with compartments in which perishable products could be kept cold or frozen, it was impossible for the people of New Zealand, Australia, and other countries of the Southern Hemisphere to ship fresh meat, butter, or cheese across the warm tropical seas to the countries in the Northern Hemisphere. They could ship such products as wool and hides, but meat, butter, and cheese would spoil on the long, hot voyage.

Now that refrigerator ships have been built, the people of these southern lands are able to export a much greater variety of products. To the people of New Zealand, who depend so largely on the raising of live stock, this change has been especially helpful.

Farm crops. As you would expect, the people of New Zealand raise wheat and other grains, temperate-zone fruits, and vegetables to provide themselves with food. They do not, however, raise any crops of great importance for export. What handicap to farming in New Zealand explains this fact?



New Zealand Government Publicity Photograph

Figure 167. A sheep station near Hawke Bay in North Island, New Zealand. Notice the surface of the land here. Why is it better suited to grazing than to the raising of crops? New Zealand is one of the five great wool-exporting countries of the world. Can you name the other four? You learned about them on page 106.

Forest work. The people of New Zealand are more fortunate than the people of Australia in having forests of softwood trees to provide all the lumber that they need for building and other purposes. Lumbering is carried on in both islands, chiefly to supply the home market.

One of the most valuable trees is the kauri pine, which grows in North Island. It is a tall, straight tree which provides excellent lumber, and it is cut in large quantities. The hardened resin of kauri pines which long ago fell to the ground and rotted away is dug from the earth in North Island and is exported to the countries of western Europe and to the United States. It is used chiefly in the making of varnishes.

Manufacturing. As yet New Zealand is not a great manufacturing country, and its principal industries are those by which the foodstuffs and raw materials from the farms and ranches are prepared for home use or for export. Among the more important manufacturing plants are meat-packing plants, butter factories, cheese factories, flour mills, tanneries, sawmills, woolen mills, clothing factories, and shoe factories.

As time goes on, the people will probably do more manufacturing, for there is coal in New Zealand, and the swift-flowing rivers provide plentiful water power for the making of electricity. New Zealand, however, is not so fortunate as Australia in resources for manufacturing, for it has no iron ore.

New Zealand Government Publicity Photograph

Figure 168. New Zealand farmers returning from a dairy factory where they have sold their milk. In New Zealand a "dairy factory" may mean a butter factory or a cheese factory. Large quantities of butter and cheese from New Zealand are sold in Great Britain.

Giving reasons. Give reasons for each of the following facts:

1. Stock-raising is the most important kind of work in New Zealand.
2. Years ago the principal exports of New Zealand were wool and hides and skins. Today butter, cheese, and fresh meat are also very valuable exports.
3. The leading imports of New Zealand are manufactured goods.
4. The trade of New Zealand is chiefly with Great Britain.
5. Although Australia and New Zealand are neighboring countries, their trade with each other is much smaller than their trade with Great Britain.

Trade with distant lands. You have only to study the map on page 153 to see that the leading exports of New Zealand are products of the ranches and the dairy farms. For many years wool has been by far the most valuable export, and quite recently butter has won second place over meat. Cheese and hides and skins also are valuable exports. *See Figure 169.*

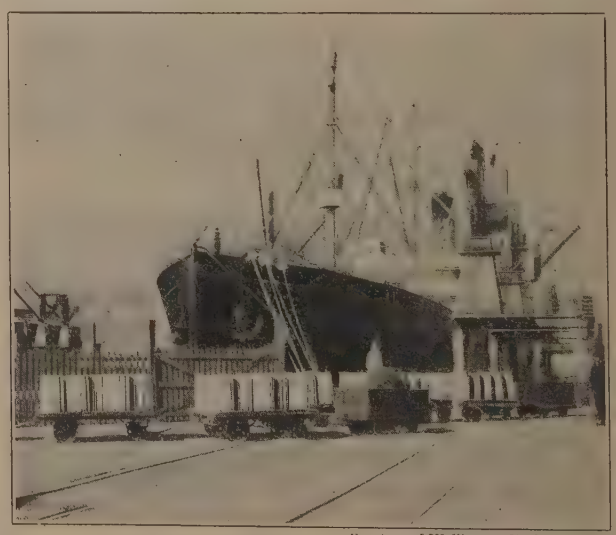
Study the imports, and you will see that they are chiefly manufactured goods. What does our country sell to New Zealand? How do those imports show that New Zealand is a prosperous country?

You will probably not be surprised to learn that Great Britain takes about three fourths of the exports of New Zealand and supplies about half the imports. The dominion produces a large surplus of certain foodstuffs and raw materials that are greatly needed in Great Britain, and offers an excellent market for the manufactured goods which are produced in such great quantities there.

A check. Read the questions on page 165 again. You should be able to think out the answers to them now.

Map work. Complete your map of the British Empire by coloring New Zealand, Australia, and the outlying lands governed by Australia. Then compare your map with the map on pages 90–91 and see if it is correct in every way.

Special credit work. Try to find a book which tells about the discovery of New Zealand by the Dutch explorer Tasman, and about the visit of Captain Cook. Tell your class of the experiences which these men had with the Maoris.



Courtesy of Wellington Harbour Board

Figure 169. A "refrigerator ship" from London being loaded with crates of cheese at Wellington. The cheese will travel a distance of about 12,500 miles on its trip from Wellington to London.

A Review of the British Empire

A summary. During your study of the British Empire you have learned that the outlying parts of the empire are valuable to the British people chiefly as (1) sources of raw materials and foodstuffs; (2) markets for manufactured goods; (3) places where people from the overcrowded homeland may go to make new homes and still live under the British flag. Give examples to prove that this is true.

You have discovered that most of the outlying parts of the empire carry on more trade with Great Britain than with any other country. That is partly because the home country and the possessions are able to supply many of each other's needs. Give examples to prove that this is true.

Another reason why there is so much trade between the home country and the possessions is that the British allow many of the products imported from the possessions to enter Great Britain "duty free." That means that shippers of such products do not have to pay *duties*, or money charges, for the privilege of selling their goods in Great Britain, as they are obliged to do in many other countries of the world. Certain other products imported from the possessions are charged duty, but the charge is less than is made on the same kinds of goods if they are imported from foreign countries. Thus the British offer the people of the possessions special advantages for marketing surplus products in the home country.

You have learned that Great Britain exercises so little control over the government of the dominions that they are almost like independent countries. What reason can you give for the fact that the people of the dominions are capable of governing themselves? Why are the people of many of the other possessions not so well able to govern themselves?

In some parts of the empire, especially India, the people want much more freedom in governing themselves than the British have as yet given them. The British believe that the people of these lands should be able to read and write and should learn more about doing work and business in modern ways before they are allowed to govern themselves. Do you think the people would be better off if they had self-government at present? Give reasons for your answer.

A check. Check your knowledge of the distant parts of the British Empire by naming each part described below:

1. The large British dominion located in North America.
2. A smaller dominion in North America.
3. The British colony in Central America.
4. The British colony in South America.
5. The British dominion in Africa.
6. The largest of the British possessions bordering the Gulf of Guinea.
7. The British possession bordering Egypt.
8. Four British possessions in the plateaus of East Africa.
9. Two British colonies in Africa named for Cecil Rhodes.
10. Two possessions which give the British control of the southern entrance to the Red Sea.
11. The lands in southwest Asia placed under British protection by the League of Nations.
12. The large country in Asia which is part of the British Empire.
13. The British part of the Malay Peninsula.
14. A continent which is a British dominion.
15. The dominion made up of islands which are the antipodes to the British Isles.
16. British possessions in the East Indies.

Naming cities. Write down the names of the cities described below. When you have finished, you will have a list of the ten largest cities of the British Empire.

1. The capital of the British Empire.
2. The largest city of India.
3. The leading seaport of western India.
4. The largest city of Australia.
5. The leading seaport of Scotland.
6. The capital of the Australian state of Victoria.
7. The largest city of the Black Country in England.
8. The great seaport on the western coast of England.
9. The largest city of the Lancashire cotton-manufacturing district in England.
10. The largest city of Canada.

Some things to prove. Give facts to prove that each statement below is true.

1. Certain parts of the British Empire are warm the year round, have abundant rainfall, and are very densely populated.
2. Other parts of the empire are very dry and very sparsely populated.
3. Certain parts of the empire are among the great farming lands of the world.
4. Certain parts are among the great grazing lands of the world.
5. Several parts of the empire are rich in mineral resources.
6. Several parts of the empire are not yet over-populated and are well suited to settlement by white people.
7. Certain parts of the empire will probably never attract large numbers of white people.

An English merchant's problem. Suppose you are a wholesale merchant in England, interested in shipping manufactured goods made in Great Britain to other parts of the British Empire. You have a supply of each kind of goods listed below, and wish to sell them in other parts of the empire. Tell where you would be most likely to find good markets for them, and why.

butter churns	gold-mining machinery
automobiles	threshing machines
woolen goods	jute-manufacturing machinery
electric fans	diamond-mining machinery
cotton gins	electrical wool clippers
airplanes	well-drilling machinery
cotton goods	coal-mining machinery
locomotives	flour-milling machinery
umbrellas	cotton-manufacturing machinery

A British buyer's problem. Imagine that you are a wholesale buyer in Great Britain and must secure from other parts of the British Empire supplies of the products listed below. To what parts of the empire should you send for them?

tea	wheat	diamonds
tin	asbestos	oil-seeds
gold	jute fiber	fresh fruit
copra	raw cotton	raw wool
palm oil	teakwood	graphite
fruit jams	fresh mutton	hides and skins
fresh beef	crude rubber	butter and cheese

Six empire problems. The British people face many problems in connection with their vast empire. Some of these problems are suggested below. Discuss them with your classmates.

1. In the dominions and in India manufacturing is increasing steadily. This means that in time the demands for goods manufactured in the home country will probably decrease. What effect will this have on the people of Great Britain?
2. Suppose that raw materials are used in increasing quantities in the outlying parts of the British Empire where they are produced. How is that likely to affect the surplus of raw materials for export to Great Britain? If in the future the British are not able to get such large quantities of raw materials from their possessions as they have in the past, to what foreign countries can they turn to purchase additional supplies?
3. As population increases in the outlying parts of the British Empire, the demands for food will increase there, and in time the surplus quantities of foodstuffs for export may be smaller. When that time comes, from what foreign countries will the British probably buy more foodstuffs than they do at present? Give reasons for your answer.
4. For many years manufacturing increased very fast in Great Britain. Many people believe that there will be little increase, and possibly even a decrease, in British manufacturing in the future. If this should prove to be true, would Great Britain be able to support a greater population than it does today? If population should increase and manufacturing decrease, what would some of the people have to do?
5. Already Great Britain is over-populated, and at times when business is poor large numbers of people are out of work. To what parts of the empire could those who want steady work in a healthful climate go?
6. Of all the distant parts of the empire, Australia is the one which is most eager to attract new settlers from the British Isles. Explain why. What opportunities for making a good living has Australia to offer to people from the homeland? What other dominions offer similar opportunities?

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Figure 170. The landing field at Le Bourget, the airport of Paris. At the left you can see two of the hangars where the airplanes are kept. Passengers arriving at this field by airplane find motor busses waiting to carry them to Paris, a trip which takes about three quarters of an hour. Find Le Bourget on Figure 176.

FRANCE AND ITS POSSESSIONS

I. THE REPUBLIC OF FRANCE

Foreword. Across the English Channel from Great Britain lies the Republic of France. The French people are the nearest neighbors of the British, and ships and airplanes are continually traveling back and forth between the two countries.

From Dover on the English coast to Calais on the French coast the distance is less than 25 miles. Every day boats cross and recross the Channel between these two ports, carrying throngs of passengers and tons and tons of mail. The trip takes only an hour and a quarter, but the water is often rough, and therefore many people dislike the crossing. Trains from London and Paris connect with the boats, and one can make the trip between the two capital cities in about eight hours. Trace the route by train and boat from London (*E5*) to Paris (*F6*) on the map on pages 192–193.

If you wish to avoid the rough crossing of the Channel, and save as much time as possible, you can take an airplane from Croydon, just outside London, and land at Le Bourget, just outside Paris, in two and a half hours. *See Figure 170.*

Turn to the map on pages 192–193 again and find Calais (*F5*) and Marseille (*G7*). Fast trains make the trip between these two French ports, by way of Dijon (*F6*), in less than twenty hours. Prove by the map that the shortest route from the North Sea to the Mediterranean is this one across France, and that it is almost wholly a lowland route. Because of these facts, this route is one of the most important highways of travel and transportation in Europe.

The map shows that France is a six-sided country, and that three sides border the water. The Channel coast and the Atlantic

Figure 171. Part of the water front at Marseille. In the distance you can see some large ocean liners and some ocean freighters. Marseille was founded by Greek colonists about 2500 years ago, and it has always been a great center of shipping and commerce. Can you suggest any reasons for its growth as a seaport?

coast make it easy for the French people to carry on trade with the Americas, and the Mediterranean coast makes it easy for their ships to reach Africa, Asia, and Australia.

With these facts in mind you will not be surprised to learn that the French are one of the great commercial nations of the world and that their colonial empire, as their possessions are often called, is next largest to that of the British. Turn to the map on pages 196–197 and name the continent in which most of the French possessions are located. Can you give a reason why the French control so much of that continent?

As you read about France and its possessions, keep these questions in mind:

1. What likenesses and differences are there between the work of the people in France and the work of the people in Great Britain?

2. Are the French possessions more valuable than the British possessions or are they less valuable?

1. French Seaports and their Trade

On the map on pages 188–189 find the four leading seaports of France. Which is the northernmost port? On what body of water is it located? At the mouth of what river is Havre? Bordeaux? Near the mouth of what river is Marseille?

By studying the trade of these ports we can discover some of the likenesses and differences between France and Great Britain. Prove by the exports and imports that

1. The French, like the British, carry on much manufacturing.

2. France is not so well supplied with coal as Great Britain.

3. France, like Great Britain, has no great home supply of petroleum.

4. The French, like the British, import foodstuffs and raw materials from North America and South America.

5. The French, like the British, find in their colonies a valuable source of foodstuffs and raw materials, and a valuable market for manufactured goods.

Marseille — the Mediterranean gateway. Marseille is the second largest city of France and the greatest of the French seaports. Study its location more carefully and you will see that it is at the southern end of the Rhône-Saône Valley, some distance east of the Rhône delta. On the map (pp. 188–189) find the canal by which barges may reach Marseille from the Rhône River. Marseille has a good natural harbor, but not a very large one, and its foreign trade is so great that docks have been built westward along the Mediterranean coast for about three miles. *See Figure 171.*

In order to understand the growth of Marseille you need to look at the map on pages 192–193. Trace the Rhône-Saône Valley northward, and you will see that it forms a lowland corridor leading almost to the Paris Basin, the great plain in the midst of which Paris is located. Do you see how natural it is that railroads should follow this lowland corridor to the Mediterranean, and why a great seaport was bound to grow up as an ocean gateway at its southern end?

Because of its location Marseille is the port through which most of the French trade with northern Africa and Asia is carried on. Ships come to its busy wharves from the United States and from the countries of South America also. Among its imports are oil-seeds of various kinds from all over the world, and one of its greatest manufacturing industries is the refining of vegetable oils and the making of soaps.

Havre and Dunkerque. Havre owes its growth to its location at the mouth of the Seine. This river and its valley form a natural highway of travel and transportation through the heart of the Paris Basin, and therefore Havre is the chief ocean gateway for this region. Dunkerque has grown up as the port for a great industrial district in the northern part of the plain. What reason does the map (pp. 188–189) suggest for the growth of manufacturing in that part of France?

Photograph by Ewing Galloway, N. Y.

Figure 172. A glimpse of the water front at Havre, showing two French ships which have just arrived from the United States. Havre is an important port for passenger liners as well as for freighters.

As you would expect from their location, Havre and Dunkerque handle much of the French trade with Great Britain and the Americas. At their wharves ships from the Americas unload large quantities of raw materials such as cotton and wool, and take on cargoes of manufactured goods from French mills and factories. *See Figure 172.*

Bordeaux — gateway for the Aquitaine Basin. The plain in southern France which is drained by the Garonne River and its tributaries is called the Aquitaine Basin, and Bordeaux is its ocean gateway. The city is located at the mouth of the Garonne and is the great wine-exporting port of France. What do you find on the map to explain the importance of its exports of wine?

Figure 173. European airways. The black lines show the routes over which passenger airplanes are operated regularly.

Bordeaux is a busy manufacturing city also. Among its leading industries are flour-milling, sugar-refining, coffee-roasting, and the making of chocolate. How are these industries connected with its trade with distant lands? Why do many of the French imports from tropical lands enter the country at Bordeaux rather than at Havre?

Ports of lesser importance. As you read about each of these ports locate it on the map on pages 188–189. Although the larger ocean ships cannot go up the Seine beyond Havre, smaller freighters go upstream to Rouen (*G4*). Many of them bring cotton from the United States, and Rouen has become one of the great cotton-manufacturing cities of France.

Photograph by Ewing Galloway, N.Y.

Figure 174. A view of one of the smaller canals in the Paris Basin. Formerly donkeys or oxen were used to tow the barges on the smaller canals, but much of the towing is now done by automobiles. On the larger canals and rivers the barges are towed by steam tugboats.

Cherbourg (*F4*) will remind you of Southampton, for it is the port used by many of the great ocean liners which bring passengers to France from the United States and other countries on the western side of the Atlantic.

Farther south is the port of Nantes (*F5*), at the head of the estuary of the river Loire. Nantes shares with Bordeaux some of the French trade with tropical lands.

The railroads of France. Travelers entering France through any one of the seaports find good railroad service to almost any part of the country, and express-train service to Paris. The map on pages 192–193 shows that Paris is the great center of the railroads of France. All the main lines meet there, forming the spokes of a "railroad wheel" of which Paris is the hub.

The inland waterways. Turn to the map on pages 188–189 again and notice that many of the rivers of France are navigable. Notice also that there are many canals connecting the navigable rivers. The rivers and canals form a great system of waterways which are used for transporting freight in barges. We shall find that the people of France and other countries which share the Central Plains of Europe use rivers and canals for transporting freight much more than we do in the United States. Such transportation is slow, but it is cheaper than transportation by railroad. For this reason the barges carry chiefly bulky goods, such as coal, lumber, and iron ore, which have a low value in proportion to the space which they take up. *See Figure 174.*

Highways and airways. The French have also covered their country with a great network of highways for automobiles and motor trucks, and they have been one of the leading nations in developing regular airplane service for passengers and mail. All the larger cities have their landing fields, and from Paris there are routes over which passenger planes fly regularly to the leading cities of the neighboring countries. *See Figure 173.*

Tracing canals. Use the map on pages 188–189 to show how goods may be carried by barge from (1) the Garonne River to the Rhône; (2) the Rhône to the Rhine; (3) the Rhine to the Seine; (4) the Seine to the Loire; (5) the Seine to the Rhône.

Photograph by Ewing Galloway, N.Y.

Figure 175. An airplane view of part of Paris. In the distance you can see part of the little island (the Ile de la Cité) where the first settlement was made. The large open space with the tall column in the center is the Place de la Concorde, and beyond it are the Garden of the Tuileries and the buildings of the Louvre.

Naming ports. Prove your acquaintance with the French seaports by naming correctly each one described below.

1. The greatest seaport of France.
2. The port which is the chief ocean gateway for the Paris Basin.
3. The port where many travelers from England enter France.
4. The port which is the ocean gateway for the Aquitaine Basin.
5. The port which serves an important industrial district of northern France.
6. A port for transatlantic passenger ships.

Something to prove. Prove by the maps on pages 188–189 and 274–275 that the leading imports of France are chiefly raw materials and foodstuffs and that the leading exports are mostly manufactured goods.

2. Paris and the Paris Basin

Paris, like London, attracts people from all over the world. Many come for business or study, and many for pleasure, for Paris is a city of work and of play. It is a city of great beauty also, for the French are very artistic, and they have spent much time, thought, and money in making their capital beautiful.

In Figure 175 you are looking up the river Seine toward the little island where the first settlement of Paris was made, over 1400 years ago. As the settlement grew into a town and then into a city, it spread first to the south bank of the river and then to the north bank. Figure 176 shows that today Paris spreads out for several miles in all directions from the Ile de la Cité (Isle of the City), where the first settlement was located. Study Figure 176 carefully.

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Figure 176. A map of Paris and its surroundings. The numbers show the locations of the following places: 1, Arc de Triomphe; 2, Avenue des Champs-Élysées; 3, Eiffel Tower; 4, Champ-de-Mars; 5, Place de la Concorde; 6, Garden of the Tuileries; 7, the Louvre; 8, Cathedral of Notre Dame (on the Ile de la Cité); 9, Botanical Gardens; 10, Place de la Bastille. Find the beautiful park known as the Bois de Boulogne.

Besides being the capital of France, Paris is the fourth largest city in the world, for only New York, London, and Berlin have more people. Like London, it is a great business, industrial, and financial center, and a great center of learning and culture. Can you think of any reasons why Paris has become one of the world's greatest cities?

The heart of the Paris Basin. Find Paris on the map on pages 188–189 (*H4*). Notice that it is in the very heart of the Paris Basin, at the place that can be reached most easily by way of the Seine and its tributaries. The Paris Basin is one of the richest agricultural regions of France, and long ago, when there were no railroads and but few roads, Paris became its principal trading center. Can you explain why?

As time went on, Paris became a meeting place for roads from all parts of the basin, and then for railroads. Thus from the very first the location of Paris has made it a natural center of travel and transportation, and this, in turn, has made it a great center of business and trade.

A great river port. You will remember that in our own country cities like St. Louis, which were once great river ports, lost most of their trade by water when they became great railroad centers. Paris is different, for even after it became a railroad center it continued to grow as a river port.

East and west of the central part of the city the Seine is lined with long stone wharves, where hundreds of barges unload bulky goods for use in the city. Some of the barges come upstream from Havre and Rouen, and others come from distant parts of France by way of the canals that lead to the Seine and its tributaries.

© Publishers Photo Service, Inc.

Figure 177. The Place de l'Opéra, in Paris. From left to right the buildings are an American bank, a famous café, and the beautiful Opera House.

Each year the barges bring thousands of tons of coal to Paris. Some of it comes from the large coal field in the northern part of France, and some of it is imported coal from Great Britain. On the map on pages 188–189 trace the route of the coal barges from the northern coal field to Paris.

A great manufacturing city. Just as London is the greatest manufacturing city of Great Britain, so Paris is the greatest manufacturing city of France. What advantages has it for getting raw materials and distributing manufactured goods?

One of the greatest helps to manufacturing in Paris is the fact that coal can be brought in cheaply by water. The factories are along the banks of the river upstream and downstream from the center of the city, and they extend into the suburbs. Coal comes almost to their doors by barge, and the many railroads which center in Paris distribute their products to all parts of France, to neighboring countries, and to the French seaports for export.

Among the factories on the outskirts of the city are those which make automobiles, cutlery, and various kinds of tools and machinery. Here also are factories which make automobile tires and other rubber goods, chemicals, and glass. Near the center of the city are factories for the manufacture of luxuries such as jewelry, expensive leather goods, and fine furniture. The Parisians have always been famous for their skill and artistic taste in making things of fine quality and great beauty.

Parisian goods in Parisian shops. The best way to learn how skillful and artistic the Parisian workers are is to visit the shops. In the windows you will see wonderful displays of clothing, laces, embroideries, jewelry, leather goods, toys, and other products of Parisian factories and workshops. So beautiful are these products that manufacturers in many other countries copy the patterns and designs.

The greatest industry. By far the most important industry in Paris is the making of women's clothing and hats. French dressmakers and milliners are so artistic that they set the fashions for the women of Europe and America. Buyers from the great stores in the United States and the various European countries visit Paris several times a year to learn the new styles and to purchase the latest gowns and hats to offer to their customers at home.

A busy, beautiful city. Like all great cities, Paris is full of life and activity. The sidewalks swarm with people, and the streets are crowded with automobiles. Electric trains speed through subways underground, and streams of people and automobiles cross and recross the bridges over the Seine. During the day thousands of people are busy in stores, banks, offices, factories, and workshops, and at night thousands seek pleasure and entertainment in the theaters and the gay cafés. *See Figure 177.*

What impresses the visitor most is the

beauty of this great city, — its broad boulevards lined with trees, its public squares with their fountains and monuments, its parks and gardens, and its palaces and churches.

Sight-seeing in Paris. On the right, or north, bank of the Seine are the better hotels and theaters of Paris, the principal business and shopping districts, and the more fashionable homes. There too are some of the museums and art galleries for which Paris is famous. Among them is the Louvre, which contains many of the world's finest paintings and works of sculpture. (See 7 on Figure 176).

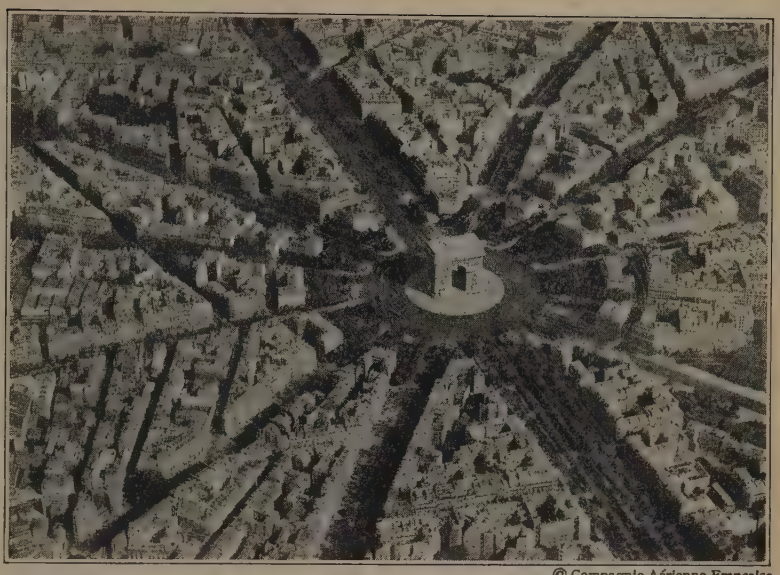

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Figure 178. An airplane view of the Place de l'Étoile, in the middle of which stands the Arc de Triomphe. The French word *étoile* means "star." Do you think this *place* is well named?

From the Louvre you can walk westward through the beautiful Garden of the Tuileries to the large open square called the Place de la Concorde, where there are eight statues, each representing a French city. From there a broad boulevard lined with trees (the Avenue des Champs Élysées) leads to a great open circle in the midst of which stands the Arc de Triomphe (Arch of Triumph). Beneath this arch is the tomb of the "Unknown Soldier" who lost his life in the World War of 1914–1918. Trace the route of this walk on Figure 176 and study Figure 178.

You will surely wish to visit the Ile de la Cité to see the beautiful Cathedral of Notre Dame, which is more than six hundred and fifty years old. On the island you will also see the group of buildings known as the Palace of Justice, where the highest law courts of France are held.

Crossing from the island to the left, or south, bank of the Seine, you will find yourself in a crowded section of Paris known as the Latin Quarter. In this section live thousands of students from all parts of France and many students from other countries, for the University of Paris, the College of France, the School of Fine Arts, and various other schools and colleges are located here. This section also has several fine museums.

If you walk westward from the Latin Quarter, you will see many of the French government buildings. Among them is the group of buildings where the Senate and the Chamber of Deputies meet. France is a republic, with a president, who is elected for a term of seven years. The Senate and Chamber of Deputies are made up of representatives from all parts of the country, like our Congress and the British Parliament.

You could spend weeks and weeks in Paris without seeing all there is of interest and beauty there. But even a short visit will show you that the French, like the British, have a capital which is a great world city.

Making a summary. Make a summary of the reasons for the growth of Paris, explaining why (1) it long ago became a market center and a river port; (2) it later became a railroad and manufacturing center; and (3) it now attracts people from all parts of the world.

Photograph by Ewing Galloway, N.Y.

Figure 179. A farming village in the Paris Basin. The basin is dotted with little villages like this, and with many larger towns and cities. Notice that the houses are clustered along the main street, and that the farm lands stretch away in all directions.

Farming in the Paris Basin. Travel in any direction you choose from Paris, and you will see people at work in the fields, for the Paris Basin is a great farming region. The westerly winds from the Atlantic Ocean bring ample rain at all seasons and keep the winter weather from being very cold. Thus, in addition to crops sown in the spring, the farmers can raise autumn-sown crops of grain.

Clustered around Paris are many market gardens, and a little farther away are dairy farms. Can you explain why? Elsewhere in the basin most of the farmers carry on mixed farming, though the special money crops differ in different sections. *See Figure 179.*

On many of the farms winter wheat is the principal money crop, for the Paris Basin is one of the chief wheat-growing regions of Europe. More wheat is grown in France than in any other European country except European Russia; but even so the French have to import additional supplies of wheat in order to meet their needs. *See Figure 180.*

In the northern part of the plain, sugar beets are the leading money crop, and there are many factories where the sugar is prepared for use. Farther south there are several districts where the farmers raise large quantities of grapes for making wine. In all parts of the region the farmers raise oats and other grains besides wheat, and keep cows, sheep, pigs, and poultry.

Two industrial districts. On the borders of the Paris Basin are two very important industrial districts. One is the iron-mining region of Lorraine in the east, and the other is the coal-mining region in the north. Find these industrial districts on the map on pages 188–189 (*J-K4*) and (*H3*).

Iron and steel in Lorraine. The iron mines of Lorraine are among the richest in the world, and they make France the second greatest country in the world in the production of iron ore. Our own country is first. Because so much iron ore is mined in Lorraine, this is the

Photograph by Burton Holmes from Ewing Galloway

Figure 180. Harvesting wheat in the Paris Basin. What reasons can you give for the fact that the Paris Basin is a great farming region? for the fact that winter wheat is a leading crop there?

leading iron-and-steel manufacturing district of France. The largest city of the district is Nancy. There, and in various other cities and towns in Lorraine, you will see huge blast furnaces and steel mills that will remind you of the Pittsburgh district of our own country. *See Figure 181.*

Photograph by Ewing Galloway, N. Y.

Figure 181. An iron-and-steel plant near Nancy, in Lorraine. Huge quantities of iron ore are smelted in Lorraine, and the pig iron is used to make all kinds of iron and steel.

The Saar Basin and its coal. On the map on pages 140–141 find the Saar Basin (*K4*) and notice its location with reference to Lorraine. This little area between France and Germany has valuable coal mines which belong to the French people. The area itself, however, does not belong to France, but is governed by a commission of the League of Nations.

Because of its coal the Saar Basin is a busy industrial district, and among its manufactures glass and porcelain products are especially important. Because of its location you might well expect this basin to supply the fuel for the blast furnaces in Lorraine. Unfortunately, however, the coal from the Saar mines makes poor coke, and the fuel for smelting iron ore in Lorraine comes largely from a coal field farther north in western Germany.

The northern coal field and its industries. By far the most valuable coal field of France is the one in the north, and a great industrial district has grown up there. In Lille and many other cities and towns of the district you will see woolen mills, cotton mills, and linen mills, for this region is the leading textile-manufacturing district of France. Part of the flax for the linen mills comes from the neighboring farm lands, and large quantities of wool and cotton are imported through the port of Dunkerque.

Because the coal of this northern field is good for coking, the district has also become an important center for the smelting of iron ore, the making of steel, and the manufacture of iron and steel products. Most of the iron ore used in this section comes from Lorraine.

France has so much iron ore that there is a surplus for export. The exports of iron ore go chiefly to Germany; for while the Germans have abundant coal in their country, they have less iron ore than they need. France, on the other hand, with abundant iron ore, has less coal than it needs, and therefore the French people are obliged to import additional supplies of coal, chiefly from Germany and Great Britain.

Giving reasons. Complete each sentence below by giving reasons.

1. The Paris Basin is a great agricultural region because _____.
2. Lorraine is a great center for the manufacture of iron and steel because _____.
3. There is a very important industrial district on the northern border of the Paris Basin because _____.
4. Dunkerque imports large quantities of raw cotton and wool because _____.
5. The French import coal from Great Britain and Germany because _____.

Photograph by Ewing Galloway, N. Y.

Figure 182. A farmyard in Brittany. The farmhouse and other buildings are of stone covered with plaster, and the roofs are thatched with straw. The peasants of Brittany have little farming machinery, and they do most of their work with the help of oxen. Why is Brittany a poorer farming region than the Paris Basin?

3. The Upland of Brittany and the Aquitaine Basin

On the map on pages 188–189 find the Upland of Brittany to the west of the Paris Basin. Find also the Aquitaine Basin, which is drained by the Garonne River and its tributaries. Judging from the products shown on the map, which do you think is the more important farming region? What reason can you give for that fact?

A hilly region. In many ways the Upland of Brittany is like the Coastal Hilly Belt of New England. Many of the hills are rocky, and much of the soil is too thin to be good for crops. Grass, however, grows abundantly because of the moist climate. Thus Brittany, like New England, is better suited to the raising of live stock than to the raising of crops, and it has become an important dairying region. Other reminders of New England are the apple orchards which cover many of the hillsides in the northeastern part of the region. *See Figure 182.*

The climate of Brittany is much milder than that of New England because of the westerly winds from the Atlantic Ocean. The grass in the pastures remains green most of the year, and in certain sheltered spots along the coast spring comes so early that the farmers specialize in raising early vegetables for the Paris market.

Mineral wealth. On the map find the two places in this upland region where iron ore is mined. Unfortunately there is no coal in the region, and so the smelting plants which have been built at Caen and Nantes use imported coal from Great Britain and Germany. The smelting plants use only a small part of the ore that is mined. Part of the surplus is exported, often in the ships which bring the coal, and the rest goes to the northern coal field of France.

A summer playground. The rocky, irregular coast of Brittany, with its many bays and inlets, is dotted with resorts where large num-

Figure 183. The harbor of a fishing village in Brittany, showing the kind of boats in which the fishermen go out to catch sardines along the coast. Many of the fishing boats have red sails.

bers of French and British people spend their summer vacations. How do the summer visitors help to provide work for the people?

Breton fishermen. Each bay and river mouth along the coast of Brittany has its little port, and each port has its fleet of fishing boats. The Bretons have been famous fishermen for hundreds of years. Some of them go to Newfoundland and Iceland for cod, and others go to the North Sea for herring. Many work in smaller boats along the coast of Brittany, fishing for sardines. On shore many of the Breton women find work in the factories where the sardines are canned in oil for export. *See Figure 183.*

Farming in the Aquitaine Basin. The Aquitaine Basin is entirely different from the Upland of Brittany; for the land is level or gently rolling, and most of the soils are deep and fertile. Like the Paris Basin, it is a great farming region; but since its climate is warmer, the farmers raise corn as well as wheat. You may think of this basin as the "corn belt" of France, for nearly all the corn of the country is grown there.

Nearly a third of all the vineyards of France are in this warm, sunny plain of the south, and huge quantities of grapes are grown for making wine. French wines take their names from the districts where they are made, and because of their excellent quality some of them find markets in many other countries. *See Figure 184.*

Turning waste lands into woodlands. On the map on pages 188–189 find the strip of coast land known as the Landes (*F6–7*). For many years this section was a waste of sand dunes which were not only useless but harmful; for the winds from the ocean caused them to move slowly inland, and little by little they were spoiling the bordering farm lands. To stop the eastward march of the dunes the people planted pine trees, and today these one-time waste lands of the Landes provide large quantities of lumber and turpentine. *See Figure 185.*

Figure 184. Vineyards in the Aquitaine Basin. The long, low building is a "winery," where wine is made from the grapes. From what seaport are the wines of the Aquitaine Basin exported?

Photograph by Ewing Galloway, N. Y.

Figure 185. A "turpentine forest" in southern France. Notice the cups which catch the resin as it drips from the gashes in the pine trees. Where in the United States could you see sights like this?

This turning of waste lands into woodlands means much to the French people, for so much of their country has been cleared of trees to make room for farms that they are not well supplied with forests. This lack of large forests is something you will notice all through the densely settled regions of western Europe, for most of the level land and much of the hilly land have been cleared for farming. Wood, therefore, is scarce and expensive. For this reason the people are caring for the forests which are left in such a way that they may produce yearly "crops" of timber. This, you will remember, is what our government is doing in the national forests of our country.

Some things to explain. 1. Give three reasons why so many of the people along the coast of Brittany get their living by fishing. Remember what led to the growth of fishing along the New England coast.

2. Many of the officers and sailors on French ships are Bretons. Explain why.

3. Explain why the Aquitaine Basin is the corn-growing region of France.

4. Explain why Bordeaux exports large quantities of wine.

4. The Central Plateau and the Rhône-Saône Valley

On the map on pages 188–189 find the Central Plateau of France and the Rhône-Saône Valley. What do you find in the plateau which suggests that there may be industrial centers there? What have you already learned about the Rhône-Saône "corridor"?

The Central Plateau. Much of this large region is not well suited to farming because the land is hilly and mountainous and much of the soil is poor. In places, however, there are rich lava soils on which the people raise grain and other crops.

As a whole the Central Plateau is better suited to grazing than to farming, and many of the people make their living by keeping live stock. Dairying is important in the northeastern part of the region because there are good markets for dairy products in the cities of the Rhône-Saône Valley. Many of the people of the plateau raise beef cattle, and others raise sheep and goats. Have you ever eaten Roquefort cheese from France? It is made from a mixture of sheep's milk and goat's milk, and takes its name from the town in the southern part of the plateau where it is made.

Coal and manufacturing. The map shows that there are several places in the plateau where coal is mined. These are very small coal fields compared with the one in northern France, but near each one an industrial center has grown up. The chief work in these centers is the making of all kinds of products of iron and steel, from bolts and nails to locomotives and heavy machinery. The iron and steel used in the factories come mostly from Lorraine. St. Étienne is the largest of the iron-and-steel manufacturing cities.

Farther west in the plateau are Clermont-Ferrand, which specializes in the manufacture of automobile tires, and Limoges, famous for the beautiful china which is made there.

A great silk-manufacturing district. On the map on pages 188–189 find Lyon (*J6*). Notice that it is located where the Rhône River, coming from the Alps, joins the Saône. Lyon is the third largest city of France and the center of the greatest silk-manufacturing district of Europe.

Silk, as you probably know, is the silvery fiber spun by the silkworm in making its cocoon. The raising of silkworms depends on the growing of mulberry trees, for the worms live by eating mulberry leaves. Mulberry trees, in turn, need a fairly warm climate, and the Mediterranean borders of Europe are well suited to their growth.

Figure 186. A silk mill in the Rhône Valley near Lyon. The prosperity of many of the villages and small towns in the Rhône Valley depends on the silk mills, which give employment to many people.

Long ago silk production became an important kind of work in the Rhône Valley of France and in the bordering part of the plateau, and the towns of that region became silk-manufacturing centers. Years ago the industry outgrew the home supplies of raw material, and large quantities of raw silk are now imported from Italy, China, and Japan.

Some of the towns specialize in spinning silk thread, and others in weaving silk cloth. St. Étienne is a center for the making of ribbons. Lyon specializes in dyeing and finishing silk goods, and is the business center of the entire silk industry. *See Figure 186.*

Vineyards and olive groves. If you travel southward through the Rhône-Saône Valley, you will see many vineyards and many groves of olive trees. The Mediterranean borderlands of Europe have winter rains and summer drought, and therefore they are not well suited to the raising of crops which need rain in summer. But grapevines and olive trees grow well in the Mediterranean climate, for they have long roots, which draw up water from far beneath the ground when the surface is dry and dusty. For this reason grapes and olives are two of the most important Mediterranean products.

Because of the abundance of grapes and olives in the Mediterranean region of France, the making of wine and olive oil is of great importance. No doubt you have eaten salad dressing made of olive oil, and perhaps you know that olive oil is also used for making soap. Marseille is the great center for the making of olive oil in France, and it was this industry that gave the city its start in the manufacture of soaps. Today, as you know, its vegetable-oil refineries and soap works use oilseeds of various kinds from many different parts of the world.

Sentences to complete. 1. The Rhône-Saône Valley is a great highway of travel and transportation because _____.

2. Several cities in the eastern part of the Central Plateau manufacture products of iron and steel because _____.

3. Marseille imports raw silk and exports silk goods because _____.

4. Large quantities of grapes and olives are grown in the Mediterranean region of France because _____.

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Figure 187. A village surrounded by farm land in the foothills of the French Alps. Notice the snow-capped mountains in the distance, and the glacier moving slowly down the valley beyond the village.

5. Among the Mountains of France

From the map on pages 188–189 name two regions of young, rugged mountains of which France has a share. Name also a small region of old, worn-down mountains in eastern France. In what way do you think these mountain regions are of the greatest value to the French people?

Cotton-manufacturing in the Vosges. In the valleys among the Vosges Mountains there are many towns where cotton goods are manufactured. The cotton industry began there long ago when the spinning and weaving were done in the homes of the people. Today the work is done in factories, many of which use hydroelectric power from the mountain streams, and because of its early start, the region is one of the important textile-manufacturing districts of France.

The Rhine Valley. The map shows that east of the Vosges France has a small share of the valley of the Rhine. You will learn more about this valley when you visit Germany. In the French section there are valuable deposits of potash salts, which, you will remember, are used in making fertilizers. These deposits make France second only to Germany in the mining and export of potash.

The French Alps. When you were studying "Home Life in Far-away Lands," you learned about the life of the people in the Swiss Alps. The people of the French Alps live much the same way — tending their cattle and goats, raising small crops on their tiny patches of level land, and supplying the needs of tourists. *See Figure 187.*

The only large city of the region is Grenoble, on a tributary to the Rhône. Long ago Grenoble became a center for the manufacture of gloves from goatskins, and it is still the great glove-manufacturing city of France. In recent years, however, its industries have increased greatly in number and kind because hydroelectric plants have been built along the swift-flowing mountain streams, providing abundant power for manufacturing. Among the newer industries of Grenoble the making of chemicals and the manufacture of machinery for use in hydroelectric plants are especially important.

The Riviera. On the map trace the mountainous coast of the Mediterranean from Marseille to Genoa, in Italy. This coast is called the Riviera, and it is a great winter playground for people from the cooler countries of Europe and America. The mountain wall of the Alps shuts out the cold winds from the north, and the winter weather is so warm that the visitors can enjoy all the out-of-door sports and pleasures that belong to summer in their homelands. *See Figure 188.*

The mountains rise steeply from the blue Mediterranean, and on their slopes are vine-

yards, olive groves, and acres and acres of roses, hyacinths, sweet peas, and many other lovely flowers. These flowers are grown for use in an industry for which the French are famous, — the making of perfumes from the oil in the blossoms.

Corsica. Turn to the map on pages 188–189 again and find Corsica (*L7–8*). This island belongs to France, but the people are of Italian descent. Because the island is mountainous, most of the people live along the coasts. They have vineyards and groves of olives and other fruit trees, and they keep sheep and goats.

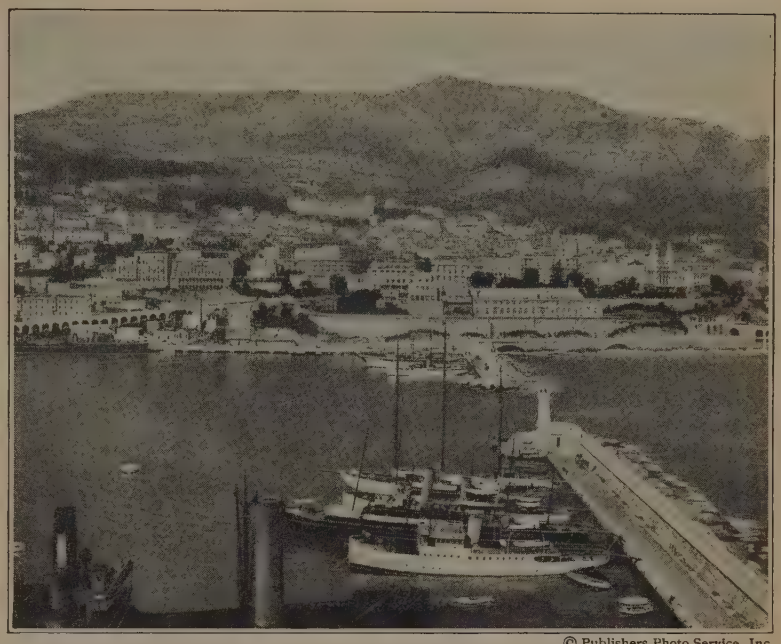

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Figure 188. Monte Carlo, a famous winter resort on the French Riviera. Monte Carlo is the largest town in the little principality of Monaco, which has a government independent of that of France.

The Pyrenees. The map shows that the Pyrenees rise like a great wall, separating France from Spain. They form such a barrier that for many years the only railroads connecting the two countries ran around the ends of the mountains. Even now only two railroad lines actually cross the mountains.

In the valleys among the Pyrenees there are a few small villages where the people carry on a little farming, but the principal use of the mountains is for pasturing cattle and sheep from the bordering lowland in the summer. To the French people this region is valuable chiefly for its many swift-flowing streams which can be used to make hydroelectric power.

Making up for the shortage of coal. By this time you know the answer to the question asked at the beginning of this section. The mountains of France are of great value to the people because their water power helps to make up for the shortage of coal in the country. Already France is using more hydroelectric power than any other European country except Italy, and its mountain streams can provide nearly twice as much again.

A Small Neighbor of France

Andorra. Hidden away in the heights of the Pyrenees, between France and Spain, is tiny Andorra. It is an independent country, but it enjoys the protection of the French nation. Its people number less than 5500, and they live in six little villages which can be reached only through mountain passes which are buried in snow for half the year. They make a poor living with their flocks and herds; but they care more for freedom than for comfort, and they do not seem to mind being almost forgotten by the rest of the world.

A playground test. 1. Tell where you would go in France in the winter time to enjoy summer sports.

2. Tell where you would go in the summer time to enjoy mountain climbing.

3. Tell where you would go in the summer to enjoy the pleasures of the seashore.

4. Explain why the Pyrenees have few summer visitors compared with the Alps.

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Reminders of home. Name one or more places in France where each person described below would find something to remind him of home.

1. A dairy farmer from New England.
2. A steel-manufacturer from Pittsburgh.
3. A rubber-manufacturer from Akron.
4. A Gloucester fisherman.
5. A cotton-manufacturer from Georgia.
6. A coal-miner from Pennsylvania.
7. A sugar-beet grower from Utah.
8. A farmer from the corn belt.
9. A California grape-grower.
10. A glove-manufacturer from New York State.
11. A silk-manufacturer from Paterson, New Jersey.
12. An automobile-manufacturer from Detroit.

A manufacturing test. 1. Use the map on pages 188–189 to point out the three leading cotton-manufacturing districts of France. Explain what advantages each district has for this industry. Tell which one of them is also a woolen-and-linen manufacturing district.

2. Point out the great silk-manufacturing district of France, and explain why the industry has devoloped there.

3. Point out the chief iron-and-steel manufacturing districts of France. Tell which ones have grown up where iron ore is mined, and which ones where coal is mined.

4. Point out the great glove-manufacturing center of France, and explain why the industry has developed there.

Finding likenesses. Tell of at least one way in which the following pairs of cities are alike: (1) London and Paris; (2) Southampton and Cherbourg; (3) Manchester and Rouen; (4) Liverpool and Havre; (5) Dover and Calais; (6) Birmingham and St. Étienne; (7) Leeds and Lille; (8) Stoke on Trent and Limoges.

Facts about Paris. 1. Tell how Paris ranks in population among (1) the cities of France; (2) the cities of Europe; (3) the cities of the world. 2. Name three ways in which Paris is a great transportation center. 3. Tell why American women are especially interested in Paris.

Some comparisons to explain. In the three statements below you will find some comparisons between France and Great Britain. Explain what each comparison means by answering the questions that follow it.

1. France is nearly two and a half times as large as Great Britain, and has two million fewer people. (1) Which country is more densely populated? (2) Which one needs more food?

2. In Great Britain $\frac{4}{10}$ of the people who work are engaged in manufacturing, and less than $\frac{1}{10}$ are farmers. In France less than $\frac{3}{10}$ of the workers are engaged in manufacturing, and $\frac{4}{10}$ are farmers. (1) In which country is farming more important? (2) In which country is manufacturing more important? (3) Which country must import more food?

3. The total value of the exports and imports of Great Britain is about twice that of the exports and imports of France. In which country is foreign trade more important?

Giving reasons. The comparisons which you have just studied show that farming is more important in France than in Great Britain, and that manufacturing and foreign trade are more important in Great Britain than in France. Prove that you understand the reasons for these facts by completing the sentences below:

1. The French people carry on more farming than the British because they have more _____ land suitable for raising _____.

2. The British carry on more manufacturing than the French because their country is not so well suited to _____, and because they have larger supplies of ____ for power.

3. The British have a greater import trade than the French because their farms produce less ____, and because they need more _____ for their factories.

4. The British have a greater export trade than the French because they carry on more _____ and therefore have a greater surplus of _____ goods to sell.

Special credit work. Find out all you can about the Louvre, the Eiffel Tower, the Arc de Triomphe, and the Cathedral of Notre Dame, and tell your classmates about them.

Figure 189. A view of Algiers, the capital and chief seaport of Algeria, as it looks from a boat in the harbor. Notice how the white buildings of the city shine in the brilliant Mediterranean sun. The sailboat is a fishing boat, and the steamer tied up at one of the wharves is a freight and passenger ship.

II. THE POSSESSIONS OF FRANCE

Foreword. Use the maps on pages 90–91 and 196–197 to compare the French possessions in distant lands with those of the British. Which country controls more land in the Americas? in Asia? What should you say about the extent of the French lands in Africa compared with the extent of the British lands in that continent?

You have learned that the British possessions are very valuable as sources of raw materials and foodstuffs and as markets for manufactured goods. As you study about the possessions of France, watch to see if they serve the French people in the same ways.

1. French Lands in Africa

If we include the island of Madagascar, the French control about the same amount of territory in Africa as do the British. Using the map on pages 196–197 as a help, locate the French possessions in Africa on Figure 90 (p. 97). Where among them do you find the fewest people? What reason does Figure 89 suggest for this very sparse population? What reason does it suggest for the larger numbers of people farther north and south in the French possessions? What parts of the French lands in Africa do you think are most valuable? Why?

The Coastal Possessions in Northern Africa

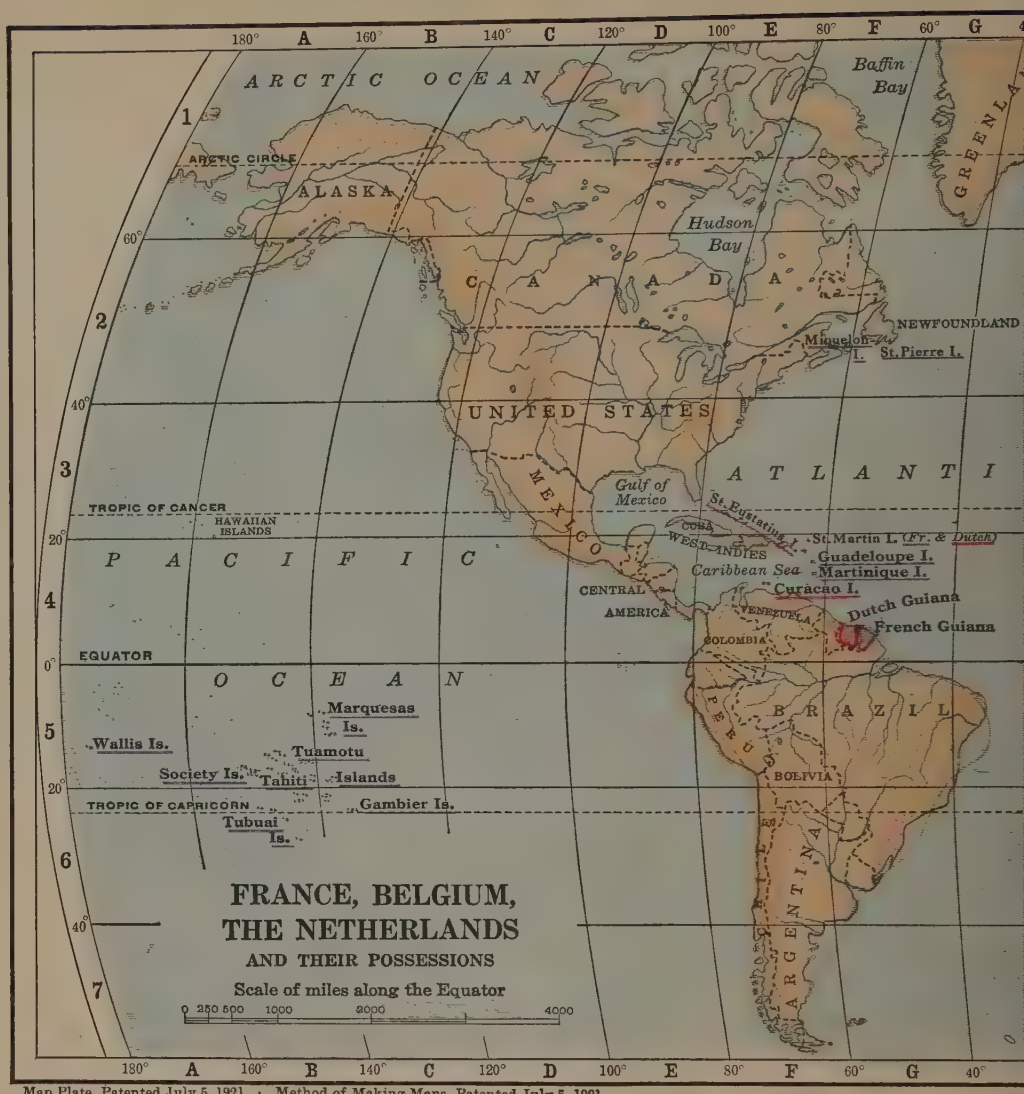
Algeria, Tunisia, and Morocco. The French find it easy to visit their lands in northern Africa, for it is only about 400 miles across the Mediterranean from Marseille to Algiers, the capital of Algeria. *See Figure 189.*

Locate Algeria, Tunisia, and Morocco on the map on pages 274–275. Algeria is a French colony with a French governor. Tunisia and Morocco have native rulers; but they are under French protection, and French officials direct the government.

FRANCE, BELGIUM, THE NETHERLANDS, AND THEIR POSSESSIONS

	Area in Square Miles
France	212,659
Algeria, Tunisia, and Morocco	470,480
Madagascar	241,094
Other possessions in Africa	2,555,172
French possessions in Asia	327,182
French possessions in America	35,906
Total	3,842,493
Belgium	11,755
Belgian Congo	918,000
The Netherlands	13,320
Dutch East Indies	788,000
Dutch possessions in America	54,694

	Population
France	40,960,000
Algeria, Tunisia, and Morocco	12,453,719
Madagascar	3,621,342
Other possessions in Africa	19,625,737
French possessions in Asia	21,895,819
French possessions in America	525,649
Total	99,082,266
Belgium	7,932,077
Belgian Congo	8,500,000
The Netherlands	7,625,938
Dutch East Indies	51,881,862
Dutch possessions in America	204,375



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The map shows that these French lands include the Atlas Mountains, which border the southern coast of the western Mediterranean. What does Figure 89 (p. 97) show about the rainfall on the seaward slopes of these mountains? Judging from the map on pages 274–275, what kinds of work do you think the people of these French lands do?

The climate of the Atlas region is of the Mediterranean type, like that of the Riviera coast. The summers are hot and dry, and most of the rain falls during the mild winter. The winter weather is so delightful that Algiers has become a winter resort.

Natives and European colonists. The native people of Algeria, Tunisia, and Morocco are mostly Arabs and Berbers, and they are believers in the Mohammedan religion. You learned about the Arabs in your study of "Home Life in Far-away Lands." They are people of the white race, and those in northern Africa are descended from Arabs who came from Arabia long ago. The Berbers are descended from tribes who entered northern Africa from southwestern Asia even earlier than the Arabs.

Many of the native people live and work in the cities and towns, and some are farmers.

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Large numbers, however, live a half-nomadic life farther inland, where they raise cattle, sheep, and goats. *See Figure 190.*

Many of the natives are skillful in weaving rugs, and others in making fancy leather goods such as slippers, purses, and small handbags. These products of native handwork are displayed in the bazaars in Algiers, Tunis, and other coastal cities, where they find an excellent sale among the tourists.

In addition to the native people in these French possessions there are considerable numbers of colonists from France, Spain, and Italy. Why is it natural that the colonists should come chiefly from those countries? Many of them are farmers, and others carry on business in the cities.

The farm lands. The best farm lands of this northern part of Africa are the narrow, fertile lowlands near the coast and between the mountain ranges. Farming suffers somewhat from the summer drought; but the people overcome this handicap by raising crops such as grapes and olives, which are able to stand the dry weather, and by irrigating other kinds of fruit crops from streams and wells. They also raise large crops of winter wheat and barley. *See Figure 191.*

Figure 190. A Berber shepherd and his sheep in Morocco. The sheep raised by the Berbers and Arabs in northern Africa provide considerable quantities of wool for export to other lands.

Metal ores. In both Algeria and Tunisia iron ore, lead, and zinc are mined. Since very little lead and zinc are mined in France, these metal ores are exported chiefly to the home country. The iron ore, on the other hand, goes chiefly to Great Britain. You should be able to give two reasons for this fact. What are they?

Another mineral product of the French possessions in northern Africa which is very valuable is phosphate. Tunisia, Algeria, and Morocco rank next to the United States in the production of phosphate rock, and large quantities are exported to France and other European countries. You will remember that phosphate rock is one of the three principal raw materials used in the manufacture of fertilizers. What have you learned about work in France which explains why the home country provides a good market for phosphate from the mines of northern Africa?

A forest product. Among the trees that grow on the slopes of the Atlas Mountains is the cork oak, the bark of which furnishes cork. Some of the natives make their living by stripping the bark from the trees and preparing it for export to France and other countries. *See Figure 192.*

The seaports and their trade. Algiers, the capital and chief seaport of Algeria, is one of the most picturesque cities on the shores of the Mediterranean. The French call it *une ville étincelante* — a shining city — because nearly all the buildings are white, and they fairly shine in the brilliant Mediterranean sun. They cluster closely around the harbor, and climb the green, wooded slopes of the bordering hills.

Algiers has many fine hotels and public buildings, but visitors find their greatest interest in the beautiful old Mohammedan mosques, and in the native bazaars where Arab merchants in white robes and turbans sell their wares. *See Figure 193.*

Special credit work. Find out all you can about how cork is grown, how it is prepared for market, to what countries it is sent, and how it is used.

Figure 191. Harvesting a crop of winter wheat on the farm of a European colonist in northern Africa. The man at the right is a native who is employed as a helper on the farm.

Figure 192. Algerian natives stripping the bark from a cork oak. Cork oaks live to be very old, and the bark can be stripped off at intervals of from six to ten years during the lifetime of the trees.

Tunis, the capital and chief seaport of Tunisia, is much like Algiers. In the harbors of both these ports you will see ships from many distant lands; but you are likely to see more French flags than British or American, for more than half the trade of Algeria and Tunisia is with France. Locate Algiers and Tunis on the map on pages 274–275 (*D3* and *F3*). What foodstuffs do they export? What two raw materials are among their leading exports? If there were room to print more exports on the map, what metal ores would be among them? What do ships bring to Algiers and Tunis from France?

The work of the French. After studying the trade of Algiers and Tunis you will not need to be told that the French possessions in northern Africa are of great value to the home country as sources of foodstuffs and raw materials, and especially as markets for manufactured goods.

Since more people mean greater markets, the French are doing many things to make these colonies attractive to European settlers. They have built thousands of miles of good roads and many hundreds of miles of railroads; they have introduced the telephone and the telegraph; they have improved the harbors; and they have opened up new lands for farming by drilling artesian wells. All these improvements are helping greatly in the development of the north African possessions of France; and as farming, mining, and other kinds of work increase in these lands, they become more and more valuable to the home country. *See Figure 194.*

Some things to explain. Explain why

1. Grapes, olives, wheat, and barley are crops well suited to the climate of the French possessions in northern Africa.
2. Wool is one of the raw materials exported from these possessions of France.
3. The people of France take most of the lead and zinc ores exported from these possessions.
4. The people of France take much less of the exports of iron ore.
5. The French are spending much money to make their possessions in northern Africa attractive to European colonists.
6. The European colonists in these possessions are largely from France, Italy, and Spain.

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Figure 193. A street bazaar in northern Africa. In Algiers, Tunis, and all the larger cities of northern Africa goods are sold out of doors in open markets. This street is the furniture market in Tunis.

Photograph by Burton Holmes from Ewing Galloway

Figure 194. Old and new means of transportation in northern Africa. The good roads built by the French make possible the use of automobiles, but the natives still use camels and donkeys.

The Sahara

A vast desert. The map on page 98 shows that the French control a large portion of the great Sahara Desert. This, as you know, is the greatest desert in the world. It stretches all the way across northern Africa from the Atlantic Ocean to the Red Sea, a distance greater than that from New York City to San Francisco. The eastern half of it extends to the Mediterranean Sea, but the western half is cut off from the Mediterranean by the Atlas Mountains. Far to the south the desert gradually gives way to the grasslands of the Sudan.

In the Sahara, as in the desert of Arabia, the summer days are very hot and the winter days are very warm. But at night, even in the summer, the air cools off quickly.

Vast stretches of the Sahara are a wind-swept waste of sand and gravel, and here and there bare, rocky hills rise above its surface. In places the wind has piled the sand up in great dunes which at a distance look like the waves of the sea. Because this great desert is so dry, most of it is useless. What does Figure 90 (p. 97) show about its population?

Life in the oases. The only inhabited spots in the Sahara are the oases, where the water from springs and wells makes possible the growth of crops. During your study of "Home Life in Far-away Lands" you learned about oases in the desert of Arabia. Find the oases of the Sahara Desert on the map on page 94.

Some of the oases of the Sahara are large enough to support good-sized towns; others are small and contain only a few hundred people. The people are chiefly Arabs, and they live in houses with thick walls of sun-dried mud bricks which help to keep out the heat. In gardens which they irrigate from springs and wells, they raise grain, vegetables, and fruits. *See Figure 195.*

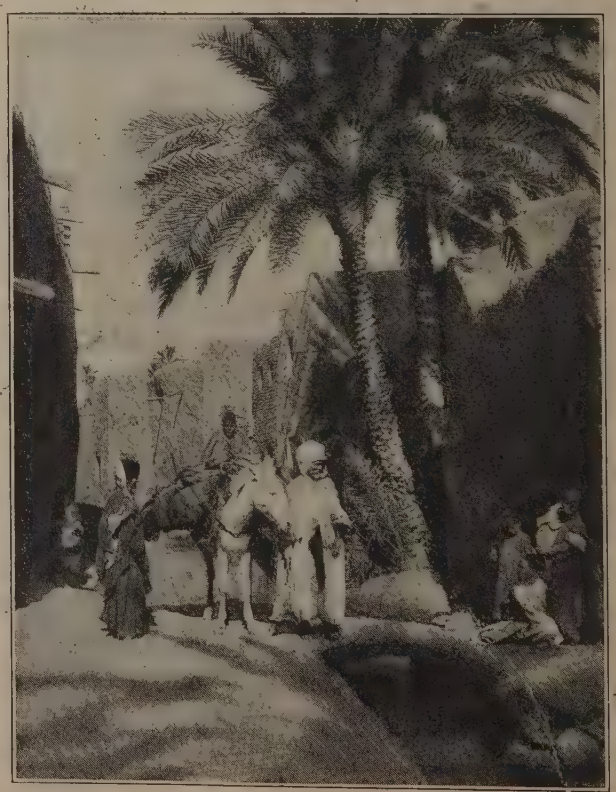


Figure 195. A street in an oasis town in the Sahara. The trees are date palms, and beyond them are some of the mud-brick houses in which the people live.

In the oases you will see many groves of date palms, for these trees grow especially well under the hot desert sun, provided, of course, that their roots can reach water. Dates are the only export product of any importance from the oases, and large quantities of them are dried and sent to Mediterranean ports for export.

Transportation in the desert. Turn to the map on page 98 and find the railroads which the French have built across the Atlas Mountains to oases on the northern margin of the desert. What reasons can you give for the absence of railroads elsewhere in the Sahara?

Photograph by Ewing Galloway, N. Y.

Figure 196. Two ways of traveling in the Sahara Desert. Notice that the automobiles have "caterpillar" wheels so that they can move through the soft, loose sands. On the camel's back is a tall canopy to protect the traveler from the heat of the sun.

Until quite recently anyone wishing to travel in the desert had to join a camel caravan. The caravans move slowly over long-used routes leading from one oasis to another, and from ports on the Mediterranean to Timbuktu and other trading towns in the northern part of the Sudan.

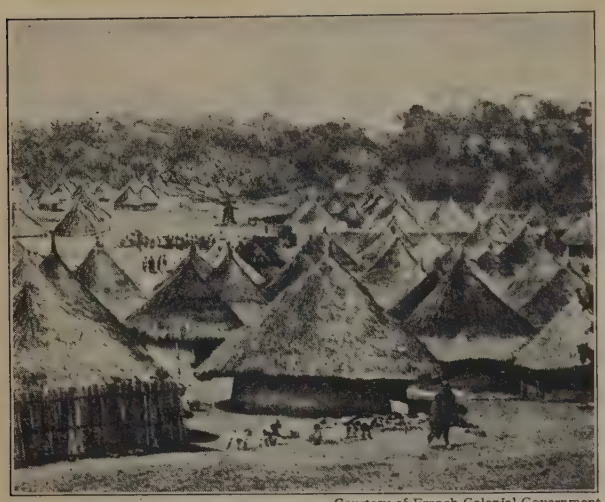
Camel trains are still used to transport goods in many parts of the desert, but along some of the old caravan routes in the north automobiles carrying passengers and mail now plow through the desert sands, covering in a few hours as much distance as a camel train can travel in a week. *See Figure 196.*

French Lands South of the Sahara

Well-populated lands. On the map on page 96 find Timbuktu (*C3*) and notice its location near the big northern bend of the Niger River. What does Figure 90 show about the population of the part of French West Africa south of the latitude of Timbuktu compared with the population of the Sahara region farther north? What reason does Figure 89 suggest for this difference? Turn to the map on pages 196–197 and find the places where French West Africa reaches the Atlantic coast and the Gulf of Guinea. Judging from the map on page 98, what kinds of work do you think are most important in the well-populated part of French West Africa?

The Sudan. Timbuktu is in the northern part of the region of Africa known as the Sudan. This region, as you already know, borders the Sahara on the south, and has enough rain for the growth of grass with scattered clumps of trees. On the west it extends to the Atlantic coast, where the colony of French West Africa known as Senegal is located.

Most of the people of the Sudan are native negroes who make their living by raising cattle and by farming in a simple way. Hides and skins are exports of some importance from this region, but the products in which the people of France are most interested are the peanuts which the natives raise. Peanuts, you will remember, are valuable oil-seeds, and large quantities of them are exported from the French portion of the Sudan to Marseille. *See Figure 197.*



Courtesy of French Colonial Government

Figure 197. One of the native villages in the Sudan region of French West Africa. The people of these villages carry on farming and raise cattle.

Timbuktu is an old Arab trading town which long ago became important as a meeting place for caravan routes from the north. From its port on the Niger, goods can be sent down that river to the coast of the Gulf of Guinea.

For many years the export products of the interior of the French Sudan were either carried northward across the desert by camel caravan to the Mediterranean or were sent down the Niger River to the Gulf of Guinea. Today most of these products are exported through the port of Dakar in Senegal, for the French have built a railroad to connect that port with the town at the head of navigation on the Niger River. Find this railroad on the map on page 98. What advantages has it over the older routes as a means of exporting goods from the Sudan to France?

The French share of the Guinea coast. What did you learn on page 114 about the climate of the coast of the Gulf of Guinea? The French lands here are the Ivory Coast and the coastal portion of Dahomey. The people of these hot, rainy coast lands are mostly native negroes who carry on farming in a simple way, raising foodstuffs for themselves and cacao for export. They also collect the kernels of the wild oil palm and cut mahogany logs in the forests. As in the neighboring British colonies on the Guinea coast, the leading exports are cacao, palm kernels, and palm oil. These go chiefly to France, and in return the French people supply the natives with the cotton goods which they need for clothing.

French Equatorial Africa. Only the southern part of this French colony is truly "equatorial," for it stretches northward to the margin of the Sahara Desert. The equatorial part is a tropical forest, while the part farther north belongs to the Sudan. The people are negroes, and they are so backward that they produce very little for export.

French Somaliland and Madagascar

Somaliland. This little French colony on the Strait of Bab-el-Mandeb is too small and too hot and dry to have any important products. To the French it is valuable chiefly because its port of Jibuti provides a coaling station for ships on the waterway between the Mediterranean Sea and the Indian Ocean.

Madagascar. On the map on page 98 find the island of Madagascar (*H6–7*). This island is more than twice as large as New Zealand and has nearly three times as many people. In spite of these facts it is at present less valuable to France than New Zealand is to Great Britain because it has but few white people. Most of the people are dark-skinned natives who are more like the people of southeastern Asia than like the negroes of the neighboring part of Africa.

The map on page 98 shows that Madagascar may be divided into three regions: the mountains in the east, the interior plateau, and the coastal plain on the west. Because of the southeast trade winds the eastern coast and the eastern slopes of the mountains are

rainy and covered with tropical forests. The rest of the island, which has less rain, is chiefly grassland.

Along the hot, moist eastern coast the people raise large quantities of rice and other food crops, while the people of the grasslands farther west raise large numbers of cattle. Among the special products of the island are vanilla beans from which vanilla flavoring is made. Many of the European colonists, who are mostly French, are interested in developing plantations of coffee, cacao, and sugar cane, and in time plantation agriculture may make the island very valuable to France.

Madagascar has much mineral wealth, but as yet mining is carried on in only a few places. At present the most valuable mineral product is graphite. More than three fourths of all the trade is with France. From the map on page 98 name the leading exports and imports.

A product test. 1. Below is a list of some of the products which the French import from their possessions in Africa. Name the colony or region from which each one comes, and point to it on the map.

cork	wool
cacao	dates
wines	wheat
graphite	peanuts
olive oil	phosphate
vanilla beans	cattle hides
lead and zinc ores	palm oil and kernels

2. Now arrange the products correctly under the following headings:

a. French possessions in northern Africa
b. French lands in the Sudan
c. French lands on the Guinea coast
d. Madagascar

3. Make a statement telling which of the four groups of possessions in Africa you think is most valuable to the French as a source of foodstuffs and raw materials.

Figure 198. Market day in a Syrian town. The man nearest you has wheat and barley for sale. Notice the scales which he uses to weigh the grain.

2. French Lands in Asia

Compared with the British lands in Asia, the lands under French control in that continent are very small. Find them on the map on pages 196–197. Which one is in the Near East? Which one is in the Far East?

Syria. Syria is an Arab country which the League of Nations has given in charge to the French. Find this country on the map on pages 274–275 (*L 3–4*). Judging from the map, what kinds of work do you think the Syrians do?

Most of Syria is rather dry, but along the Mediterranean coast there is a narrow strip of land where the yearly rainfall is over 20 inches. Most of the rain falls in winter, however, and the summers are hot and dry. Here, as in other borderlands of the Mediterranean, the people raise grapes, olives, and other fruits, and winter crops of barley and wheat. In certain parts of the country tobacco and cotton are grown. *See Figure 198.*

One of the most important kinds of work in Syria is the raising of silkworms and the preparation of raw silk for export. This is the work in which the French have given the Syrians the most help. Can you explain why?

Figure 199. Native coolies, or laborers, working in a rice field on the delta of the Sonkoi River in French Indo-China. In what ways is this delta plain well suited to rice-growing?

Figure 200. Coolies carrying coconuts gathered from the trees on a plantation in French Indo-China.

In the dry interior most of the people are nomads who wander about with their flocks of sheep, goats, and camels. Their life is like that of the Arabs whom you learned about in "Home Life in Far-away Lands."

On the map on pages 274–275 find Damascus and Beirut (*L 4*). Damascus is an old Arab trading town, with bazaars like those in Algiers and Tunis. Beirut is the capital and leading seaport of Syria.

French Indo-China. On the map of the Far East (p. 246) find French Indo-China (*B5*). Notice that this French colony shares with the neighboring country of Siam the lowland plain of the Mekong River. Find the delta plain of another river farther north in Indo-China. What does Figure 112 (p. 119) show about the rainfall in these plains? In what zone is French Indo-China? What kinds of work do you think the people do there?

French Indo-China is a monsoon land like India, and its plains will remind you of the plain of the lower Ganges. Like that plain, they are among the great rice-growing regions of the world. Rice is the principal food of the people, and it makes up nearly three fourths of all the exports. *See Figure 199.*

Other crops which are raised in various parts of French Indo-China are cotton, sugar, tea, coffee, pepper, and coconuts. The French have started rubber plantations, but as yet the production is small. From the forests on the mountain slopes come teakwood and bamboo for export. *See Figure 200.*

Since rice is by far the most important export product of the country, the export trade is chiefly with China, Japan, and the Dutch East Indies, neighboring lands crowded with millions of people whose principal food is rice. The leading import is cotton cloth, which the natives use for clothing.

The French officers in charge of the government of this colony make their headquarters at Hanoi, the capital, and at Saigon, the leading seaport. Besides the government officials there are a good many French and other Europeans who are interested in the development of tropical plantations.

The native people, who make up most of the population, belong to the Mongolian, or yellow, race, like the Chinese and the Japanese. Most of the settlements are along the rivers near the seacoast, and besides the people who live on the land there are many who live in boats on the rivers.

East of Indo-China the French hold a small area on the Chinese coast known as Kwang-chow. This is a center for French trade with China.

French towns in India. On the map on pages 196–197 find the five towns in India which belong to the French. Taken together these towns with the small areas surrounding them cover less than 200 square miles. Small as these possessions are, they are important to the French as centers for trade with India.

Pacific islands. Like the British, the French own many small islands in the South Pacific Ocean. You learned on page 140 how easily the native people of these tropical islands make their living. The French islands are useful to the people of France in the same ways that the British islands are useful to the people of Great Britain.

A check. Check your knowledge of the lands which France owns or protects by naming the places described below:

1. An island in the Mediterranean Sea.
2. Three French possessions in northern Africa.
3. A large area of French lands lying mostly in the Sudan.
4. French lands bordering the coast of the Gulf of Guinea.
5. The French possession in Africa through which the equator passes.
6. The country in the Near East under the protection of France.
7. The French colony on the Strait of Bab-el-Mandeb.
8. A large island off the east coast of Africa.
9. The French colony in the Far East.
10. The French colony in South America.
11. The tiny country in the Pyrenees under the protection of France.

Giving reasons. Complete each of the following sentences by giving reasons:

1. Algeria, Tunisia, and Morocco are the most valuable of the French possessions because _____.
2. A large section of the French lands in Africa is almost useless because _____.
3. Although Madagascar is more than twice as large as New Zealand, it is less valuable to France than New Zealand is to Great Britain because _____.
4. As a whole, the French possessions are less valuable than the British possessions because _____.
5. The French want more European settlers in their possessions in northern Africa because _____.

A picture test. Below is a list of pictures which a traveler took in the French possessions, and a list of the places where he took them. The number after each place tells how many pictures were taken there. Name the pictures taken in each place.

LIST OF PICTURES

Rice fields	A cacao plantation
A phosphate mine	Stripping cork bark
Harvesting wheat	Raising silkworms
A field of peanuts	A graphite mine
Date palms	A rubber plantation
A lead mine	Vineyards
An olive grove	An artesian well
A camel caravan	Cutting mahogany logs
Vanilla beans	Palm kernels

LIST OF PLACES

Syria (1)	Madagascar (2)
The Sahara (2)	French Indo-China (2)
French Sudan (1)	The Guinea coast (3)

French possessions in northern Africa (7)

Map work. On an outline map of Africa color all the British possessions in red. Then color all the French possessions in purple. Keep this map and add to it as you study the possessions of other European countries in Africa.

Figure 201. Dairy cows grazing on the island of Zealand, in Denmark. There are about a million and a half dairy cows in Denmark, and butter is by far the most valuable export of the country. What industrial country bordering the North Sea do you think probably provides a good market for butter from Denmark?

THE SMALL NORTH SEA COUNTRIES

I. BELGIUM, THE NETHERLANDS, AND DENMARK

Foreword. Bordering the North Sea, opposite Great Britain, are three small kingdoms — Belgium, the Netherlands, and Denmark. The Netherlands is often called Holland, but Holland is simply the name of one section of the country. The total area of these three countries is a little less than that of the state of Ohio, yet they have nearly three times as many people. One of the countries owes its prosperity chiefly to agriculture, the second chiefly to manufacturing, and the third to agriculture and commerce.

Find these three countries on the map on pages 70–71. From what you can learn of them from the map, write down their names in the order in which you think they are described above. Keep your list for checking when you finish studying this chapter.

Turn to the map on pages 196–197 and find the distant possessions of Belgium and the Netherlands. How do the possessions compare in size with the homelands? Which of the two countries has possessions in the Americas? What is the name of the largest of those possessions?

From Figure 216 on page 219 tell what large island belongs to Denmark. Do you think this is a valuable possession? Give a reason for your answer.

As you study about Belgium, the Netherlands, and Denmark, find answers to these questions:

1. How do so many people make a living in these small countries?

2. Of what use to them are their distant possessions?

1. Farming and Fishing

In all three of these North Sea countries there are large numbers of farmers, and along the coast of the Netherlands and Denmark there are many people who carry on fishing. Can you suggest reasons for the importance of farming and fishing in these countries?

The land and the climate. The map shows that all of Denmark and the Netherlands and more than half of Belgium are in the Central Plains of Europe. Thus most of the surface is well suited to farming. The climate too is favorable, for the westerly winds from the Atlantic bring rain at all seasons.

Along the North Sea coast of these countries there is a narrow belt of sand dunes. Farther inland much of the land is covered with glacial soils which are not very fertile, but they can be made to produce good crops by the use of fertilizers. The richest soils are in the western part of the Netherlands, south of the Zuider Zee, for this region is the delta plain of the Rhine and the Meuse rivers.

The land of the Danes. The map shows that Denmark occupies the peninsula of Jutland and the islands between that peninsula and Sweden. It has no coal or oil, no metal ores, and no water power. Its soils are almost its only natural resource, and even those are rather poor. Yet Denmark is a prosperous country, for the people make the best possible use of their land.

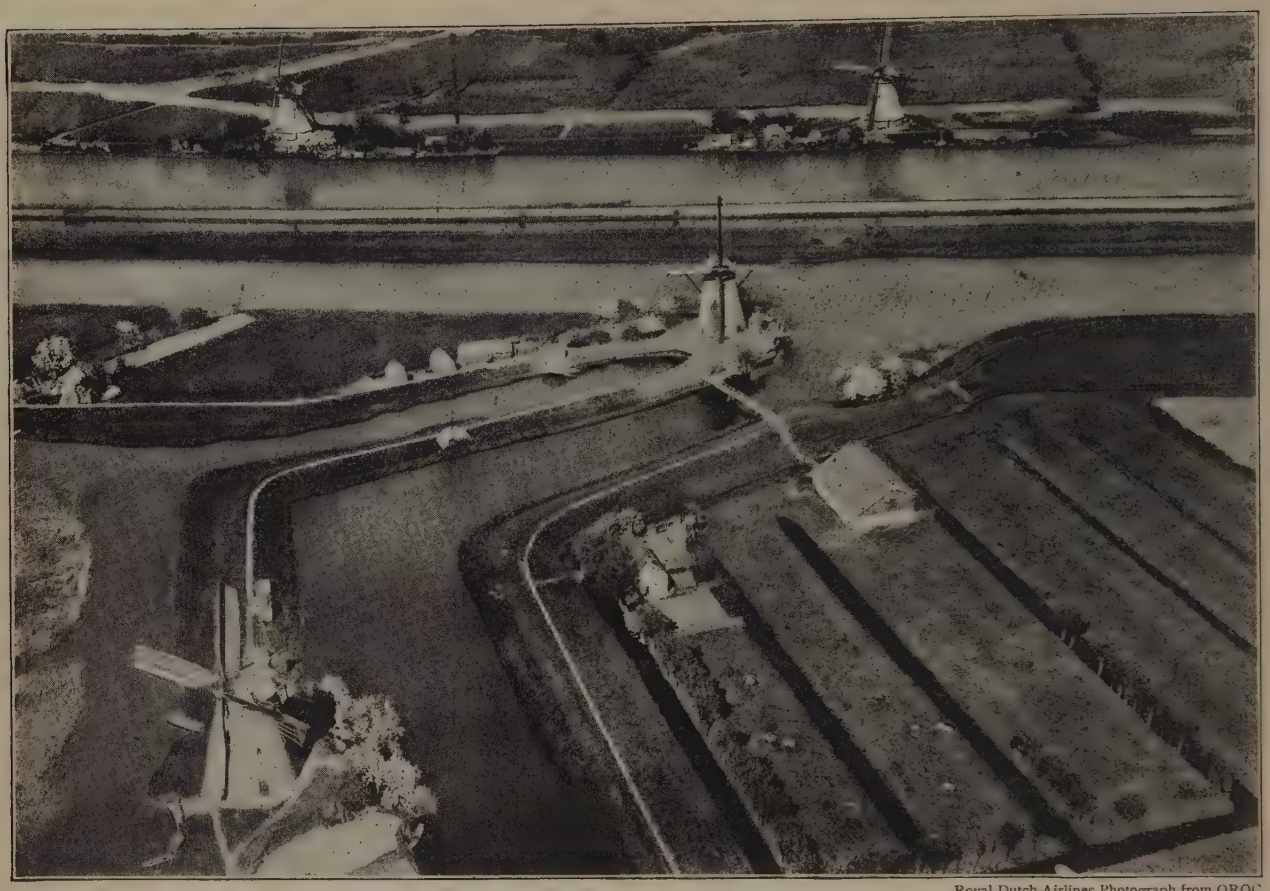
From Ewing Galloway, N. Y.

Figure 203. A coöperative creamery in Denmark. All over the country there are creameries where cream purchased from the farmers is used to make butter.

Danish farmers and their work. One third of all the workers of Denmark are farmers, and another third are engaged in work connected in one way or another with the marketing of farm products. By using fertilizers and cultivating their land carefully the Danish farmers have turned three fourths of their country into valuable farm lands, and they have made Denmark famous for its dairying industry. *See Figures 201 and 202.*

On nearly every Danish farm you will see not only cows but pigs and poultry, and on many you will see beef cattle. Part of the cultivated land is used for food crops, — chiefly rye, wheat, potatoes, and sugar beets, — but even more for oats, barley, and other crops grown chiefly to feed the live stock. The products that bring in the most money are cream, eggs, and pigs. The pigs can be raised cheaply because they are fed partly on skimmed milk.

Figure 202. Threshing grain on a farm in Denmark. Danish farmers use modern machinery in their farm work. What reason can you suggest for the fact that they raise large quantities of grain?



Royal Dutch Airlines Photograph from OROC

Figure 204. A glimpse of the Dutch polder land from an airplane. Notice the strips of cultivated land separated by ditches into which the water drains. The windmills are used to pump the water into canals which carry it to the sea. Pumps run by steam power and by electric power are also used for this purpose.

Working together. One of the chief reasons for the prosperity of the Danish farmers is that they coöperate, or work together, to market their products. Nearly every farmer belongs to one or more of the many hundreds of coöperative societies which own creameries, cheese factories, egg-packing plants, and bacon factories. He sells his products to the societies to which he belongs. The societies, in turn, prepare the products for use and carry on the business of marketing them at home and in other countries. *See Figure 203.*

By selling to their coöperative societies instead of trying to market their products separately, the Danish farmers are sure of getting good prices; and since Denmark is almost wholly an agricultural country, the prosperity of the farmers means the prosperity of the entire nation.

Many cities in England depend largely on Denmark for their butter, eggs, and bacon. In fact, about half of all the foodstuffs exported from Denmark go to Great Britain. What reasons can you give for this?

The Dutch polders. The best farm lands in the Netherlands are the polders on the great delta of the Rhine and the Meuse. When you were studying "Home Life in Far-away Lands," you learned that the polders are the low, flat lands which the Dutch have drained by building dikes around them and pumping the water out. You also learned that the larger canals, which carry away the water, are highways of transportation. *See Figure 204.*

Royal Dutch Airlines Photograph from OKUC

Figure 205. Another view of the polder land from an airplane. This is a Dutch town near Amsterdam, where the people specialize in raising many kinds of flowering plants and flower bulbs. See if you can find some of the long, low hothouses in the picture. They are filled with blossoming plants all winter long.

The low, moist polders make rich pastures, and therefore the principal work of the polder farmers is dairying. Butter is exported to Germany and other neighboring countries, and Dutch cheeses find markets in distant lands as well as in those close by.

Some of the polder farmers have market gardens where they raise fresh vegetables for the people of the cities and for export to neighboring countries. Many of the market gardeners have hothouses so that they can raise vegetables in winter as well as in summer. This is profitable business, for fresh vegetables bring high prices in the winter.

If you visit the polder land in the spring, you will see acres and acres of beautiful flower gardens filled with tulips, hyacinths, and narcissi. These flowers are grown not for the blossoms but for the bulbs, which are sold to florists and seed merchants in many different parts of the world. *See Figures 205 and 206.*

Adding to the polder land. The higher land east of the polders has much poorer soil; but in spite of this it is used for raising rye and other grains and for pasturing cattle. But the Dutch want more of the rich polder land, and so they have started to drain part of the Zuider Zee. Find this inland sea on the map on pages 70–71 (*K 4*).

Across the entrance to the Zuider Zee the Dutch are building a great dike, or wall, to keep out the sea waters. When the dike is completed, they will pump enough water out

Figure 206. Acres of blossoming narcissi on a bulb farm in Holland. The blossoms are allowed to wither in the fields, and later the bulbs are taken up.

of the Zuider Zee to uncover more than half a million acres of its level bottom. This new land, reclaimed from the sea, will give the Dutch much additional polder land to use for farming.

Farming in Belgium. As you would expect, the best farm land of Belgium is in the lowland region. The farms are very small, but the farmers use the land intensively; that is, they make every acre produce as much as it possibly can. Mixed farming is the rule, and the leading crops are rye, wheat, potatoes, and sugar beets for food, and forage crops for live stock.

On the map on pages 70–71 find the place in the lowland of Belgium where flax is a special crop. This district is in the valley of the Lys River. What kind of manufacturing do you think is carried on in this valley?

Study the map again and see if you find any foodstuffs among the leading exports of Belgium. Do you know of any reason why the Belgians do not export foodstuffs, as the Dutch and the Danes do?

Dutch and Danish fishermen. Since the North Sea is one of the best fishing grounds in the world, many people along the coast of Denmark and the Netherlands make their living from the sea. The Dutch and Danish fishermen catch many kinds of fish, but herring, cod, and mackerel are the most important.

On the map on pages 70–71 find the canal which connects Amsterdam with the North Sea (*K4*). At the entrance to this canal is the Dutch fishing port of Ymuiden, which will remind you of the fishing ports along the east coast of England and Scotland. It has a large fleet of trawlers which bring in great quantities of fresh fish from the North Sea. Express trains, waiting near the wharves, rush the fish to Amsterdam and to cities in Germany.

Fishing and seamanship. In the Netherlands, as in England, fishing long ago led many men to follow the sea; and the Dutch, like the English, very early became explorers and settlers of distant lands. Today the Dutch have a large fleet of merchant ships, and they carry on trade in all parts of the world.

Proving statements. What facts can you give to prove each of the following statements?

1. The Danes are skillful, businesslike farmers.
2. The Dutch are more fortunate in their soils than the Danes.
3. The Dutch wish to add to their better farming lands.
4. The Belgians need all the food they can produce.

Special credit work. Find out what the Dutch have had to do to make the low polder land safe from river floods, and tell your class about it.

2. Seaports and Manufacturing Cities

Turn to the map on pages 70–71 and find the chief seaports of Belgium, the Netherlands, and Denmark. Which country has two large ports? What port is at the mouth of the Rhine? Judging from the exports, which one of the three countries do you think carries on the most manufacturing?

The capital of Denmark. On the map find Copenhagen, the capital and chief seaport of Denmark (*O3*). Notice that it has an excellent location for trade with the neighboring countries. The Danish name for this city is Köbenhavn, which means "Merchants' Harbor." Ships can reach it easily from the Baltic Sea on the east, and by two routes from the North Sea on the west, one around the northern end of Jutland, and the other through the Kiel Canal. Find this canal on the map (*M3*).

By Ewing Galloway, N. Y.

Figure 207. A view of Copenhagen looking east toward Sweden and showing part of the harbor. The large building at the left of the center of the picture is the palace of the king of Denmark.

Copenhagen can also be reached by train from all parts of Denmark, from Sweden, and from Germany. Through train service is made possible by ferries which carry freight and passenger cars across the bodies of water which separate the Danish islands from one another and from Jutland, and across those which separate Denmark from Sweden and Germany.

Because of its location, its shipping, and its railroad connections, Copenhagen is the largest city and the leading business center of Denmark. It also carries on some manufacturing, especially shipbuilding, but it is much more important as a commercial center than as an industrial center. *See Figure 207.*

Manufacturing and trade in Denmark. The lack of coal, oil, and water power in Denmark is a great handicap to manufacturing, and the principal industries are those which have to do with the preparation of farm products for use, such as the making of butter and cheese, meat-packing, and sugar-refining.

The trade of Denmark shows clearly how largely the people depend on agriculture. The leading exports, as you know, are foodstuffs from the farms. Among the imports are millions of dollars' worth of oil cake and grain for cattle feed, and large quantities of fertilizers. The rest of the imports show Denmark's lack of fuel and its small industrial development. Turn to the map on pages 70–71 and prove that this is true.

Rotterdam — gateway for the Rhine Valley. On the map on pages 70–71 find Rotterdam (*K5*). This great seaport is on the Meuse River (or the Maas, as the Dutch call it), a short distance below the point where that river is joined by one of the distributaries of the Rhine. On the map on pages 192–193 trace the Rhine upstream from its mouth to Basel, in Switzerland.

The Rhine is navigable for barges and river steamers all the way from Basel to Rotterdam, and its valley is an important railroad route. The Rhine Valley is also a rich agricultural region, and in and near it in western Germany are many great industrial centers. Much of the commercial importance of the Netherlands is due to the fact that it controls the mouth of the Rhine, and Rotterdam has become one of the greatest seaports of Europe because it is the ocean gateway for the Rhine Valley.

Royal Dutch Airlines Photograph from OROC

Figure 208. An airplane view of one of the many docks, or deep-water basins, for ships along the Maas at Rotterdam. Notice the many ocean freighters and river barges, and the long storage warehouses which border the dock. The ship in the distance, with two smokestacks, is a large transatlantic passenger liner.

Large ocean ships come to Rotterdam through a deep waterway which the Dutch have dug from the North Sea, and they load and unload in huge docks on both sides of the river. Many of the bulky imports, such as grain, oil, and coal, are loaded on barges at Rotterdam and sent upstream to the industrial centers of the Rhine Valley in Germany. *See Figure 208.*

Of course Rotterdam imports and exports goods for the Dutch people; but when you think of this great seaport, remember that it handles trade not only for the Netherlands but also for the neighboring part of Germany.

Amsterdam. The map shows that Amsterdam is farther north, near the Zuider Zee (*K 4*). This is the largest city of the Netherlands, and the people have made it a great seaport by digging a canal to connect it with the North Sea. Ships come to it from all over the world, and it is the port through which much of the Dutch trade with the East Indies is carried on.

Amsterdam and Rotterdam are connected not only by railroads but also by a canal, and large quantities of goods are carried back and forth between them by barges. In both cities there are many small canals for the transportation of goods in small barges. *See Figure 209.*

The capital of the Netherlands. The Hague ('s Gravenhage), capital city of the Netherlands, is nearer the seacoast than either Rotterdam or Amsterdam, but it is not a seaport. It is a very attractive city with many parks and boulevards and many beautiful public buildings. Among them is the Palace of Peace where the Hague Tribunal meets to settle

difficulties between the people of different nations in a friendly way.

The trade of the Netherlands. The map shows that the Dutch people import a great variety of goods. Among them foodstuffs and raw materials from the Dutch East Indies and other tropical lands hold a high place. Wheat and flour also are important; for most of the Dutch polders are too moist for wheat, and most of the soils of the drier lands farther inland are too poor. The imports of coal and oil suggest a shortage of fuel in the Netherlands, and the high rank of iron and steel goods among the imports indicates that there are no great iron-and-steel manufacturing centers in the country.

Figure 209. A view in Amsterdam. Amsterdam has many canals which serve as "water streets" on which bulky goods are transported in small boats and barges. In this picture you are looking down one of the larger canals toward the railroad station.

The map shows that the principal exports of the Netherlands are foodstuffs. Notice, however, that cotton goods hold high rank among the exports. To what part of the world do they go?

Manufacturing in the Netherlands. The Dutch have but one small coal field in their country, and they have no iron or other metal ores. Some of their leading manufactures, such as butter and cheese, depend on raw materials produced at home, but more of them are connected in one way or another with foreign trade.

As you would expect, Rotterdam and Amsterdam are the leading manufacturing cities, and both are shipbuilding centers. Can you explain why? Imports of tropical products have made Amsterdam a center for sugar-refining, cigar-making, coffee-roasting, and the manufacture of cocoa and chocolate. Amsterdam is also well known for the cutting of diamonds. Where do the rough diamonds come from?

Another very important industry in the Netherlands is the pressing of oil-seeds and the refining of vegetable oils. How is this work connected with the import and export trade? As you would expect, the Dutch people also manufacture goods to supply the needs of the people in their tropical possessions. Chief among these is cotton cloth. Can you explain why?

Do you see how important commerce is to the Dutch people? Long ago their seamanship made them traders and won them the rich East Indies. Their location at the mouth of the Rhine also has increased their commerce greatly; and commerce, in turn, has played a large part in the growth of manufacturing.

Antwerp and its trade. On the map on pages 70–71 find Antwerp (Anvers), the seaport of Belgium (*K 5*). This city is located not far from the mouth of the Scheldt River and is connected with all parts of Belgium by railroads and canals. Many of its imports go to western Germany, but it is a somewhat less important gateway for that region than is Rotterdam. Like Amsterdam, Antwerp is a shipbuilding center, and is well known for the cutting of diamonds. *See Figure 210.*

Photograph by Ewing Galloway, N.Y.

Figure 210. A glimpse of the water front on the Scheldt River at Antwerp, showing the old castle known as The Steen. The lower course of the Scheldt has been deepened by dredging so that large ocean ships may come upstream to Antwerp.

How many things do you find among the imports and exports of Antwerp to prove that Belgium is a manufacturing country? Belgian trade is much like British trade; for the leading imports are foodstuffs and raw materials, and the leading exports are manufactured goods. Do you know why Belgium is a greater manufacturing country than the Netherlands?

The Belgian coal field and its manufactures. Turn to the map again and you will see that the coal field of northern France continues eastward along the margin of the upland region of Belgium. The coal mined here has led to the growth of a great iron-and-steel industry. At Liége and other cities along the coal field there are blast furnaces, steel mills, and many factories for the manufacture of iron and steel products. *See Figure 211.*

A little iron ore is mined near the coal field, but most of the ore comes from the neighboring duchy of Luxembourg. Find Luxembourg on the map (*K–L 6*), and you will see that its iron field is a northern extension of the Lorraine field of France. Luxembourg has an independent government, but in its business affairs it is closely associated with Belgium.

Other important industries of the Belgian coal field are the manufacture of glass and chemicals and the refining of zinc. Some of the zinc is mined close by, but most of it is imported.

East of Liége, in the upland region, is a district where woolen goods have been manufactured for over five hundred years. The upland has always been a sheep-raising region, but today it supplies only a small part of the raw material needed by the mills. Most of the wool now comes from Argentina.

Textile-manufacturing in Flanders. The western part of the plain of Belgium is called Flanders, and for hundreds of years it has been a famous textile-manufacturing region. Flax grown in the valley of the Lys long ago led to the manufacturing of linen goods, but the industry has now outgrown the home supply of raw material. Later, cotton-manufacturing was begun in this region. Today all the larger cities have linen mills or cotton mills, or both. The largest of the textile centers is the old city of Ghent. Much of the flax and most of the cotton for its mills come by barge from Antwerp.

The capital of Belgium. On the map on pages 70–71 find Brussels (Bruxelles), the capital and largest city of Belgium (*K 5*). Its central location in the country has made Brussels an important railroad and business center. It is also a beautiful city, with many parks and playgrounds and fine public buildings. Its chief manufactures are laces, rugs, and carpets, and it is a center for the sale of lace which Belgian women make by hand.

Photo Nels, Brussels

Figure 211. Charleroi, the most important coal-mining center in Belgium. Charleroi is one of the many mining and industrial cities located on the coal field which extends from northern France across Belgium. Besides its coal mines, the city has iron-and-steel plants, glass factories, and many other kinds of manufacturing plants.

A check. 1. Look at the list which you were asked to make at the beginning of this chapter and see if it reads as follows: Denmark, Belgium, the Netherlands. If it does, it is correct.

2. Complete the following sentences by giving reasons.

a. Farming is the most important kind of work in Denmark because _____.

b. Manufacturing is more important in Belgium than in Denmark or the Netherlands because _____.

c. The Netherlands is a greater commercial country than Denmark or Belgium because _____.

Explaining differences. In the following sentences certain differences between Belgium, the Netherlands, and Denmark are stated. Give the principal reasons for the differences.

1. Denmark has about 207 people to each square mile, while Belgium has 680.

2. The Netherlands is not quite so densely populated as Belgium.

3. The Belgians need all the food they can produce, while the Danes have large quantities of food for export.

4. The Dutch have a much larger fleet of merchant ships than the Danes or the Belgians.

5. In proportion to the population the Danes import more manufactured goods than the Dutch or the Belgians.

6. There are many more miners among the Belgians than among the Danes or the Dutch.

7. The Belgians import greater quantities of cotton and wool than the Dutch.

Naming ports. Name the port in Belgium, the Netherlands, or Denmark where you would be most likely to see each ship described below, and explain why.

A ship (1) unloading wool from Argentina; (2) loading butter and bacon for England; (3) unloading goods bound for western Germany; (4) loading iron and steel goods; (5) unloading oil cake and fertilizers; (6) loading vegetable oils; (7) unloading sugar and cacao.

II. COLONIAL POSSESSIONS

Foreword. You have learned that the Dutch carry on much trade with their possessions in the East Indies. The trade of the Belgians with their colony in Africa is very much less, and Danish trade with Greenland is exceedingly small. Can you suggest any reasons for these great differences in trade?

Courtesy of Colonial Institute, Amsterdam

Figure 212. Harvesting sugar cane in Java. The cane stalks are taken to factories, where they are crushed to squeeze out the juice from which the raw sugar is obtained by boiling and evaporation. There are nearly 200 sugar factories in the Dutch East Indies.

The Dutch East Indies

Tropical islands. The Dutch East Indies include the parts of Borneo and New Guinea which belong to the Netherlands, the large islands of Sumatra, Java, and Celebes, and many smaller islands. Taken together, the Dutch East Indies are more than fifty times as large as the Netherlands, and they have more than seven times as many people.

These islands are in the heart of the tropics, and are hot and rainy the year round. Many parts of the islands are mountainous and covered with tropical forests. By far the most densely populated island is Java, which has nearly 700 people to the square mile.

Plantation products. The East Indies are very valuable possessions because they produce tropical products needed in the temperate countries of Europe and America. The Dutch and other groups of white people have established plantations of rubber, sugar cane, coffee, tea, tobacco, and coconuts on the islands, and large quantities of these products are exported, chiefly to Europe and the United States. *See Figures 212 and 213.*

The Dutch East Indies stand next to British Malaya in the production of rubber, furnishing about a third of the world's supply. Java stands next to Cuba among the countries which produce cane sugar, and it exports more coffee than any other part of the Old World. The native people of the East Indies are intelligent, and they make excellent plantation workers. Many thousands of them work on the plantations, where they live in huts provided by the owners.

The chief crop which the natives raise for their own use is rice, for this grain is their principal food. In Java, where the population is so dense, additional supplies of rice are imported from the neighboring countries of southeastern Asia.

Mineral wealth. Borneo, Sumatra, and Java have valuable oil fields. In all three islands there are petroleum refineries, and gasoline, kerosene, and fuel oil are exported to the Netherlands, Great Britain, and other European countries, and to China and Japan. The islands of Banka and Billiton, near Sumatra, have tin mines which make the Dutch East Indies second only to British Malaya in the production of this metal.

Batavia and its trade. On the map on page 346 find Batavia (*B 7*). On what island is it? Batavia is the largest city and chief seaport of the Dutch East Indies. It is also the capital, where the Dutch officials who have charge of the government make their headquarters.

Batavia serves as a collecting and distributing center for the Dutch East Indies, just as Manila serves the Philippines. Besides the large ocean ships in its harbor, you will see the small boats which bring in products of the other islands for export and carry back supplies for the people. Turn to the map on page 346 and prove that the trade of these islands is like that of other tropical lands, — an exchange of foodstuffs and raw materials for manufactured goods.

The trade of the Dutch East Indies is chiefly with the Netherlands and other European countries, and with the United States. The leading export to our country is rubber, for we use more rubber than any other nation in the world.

The Netherlands supplies many of the manufactured goods used in the islands, especially cotton goods. Great Britain also has a large share in the import trade of the Dutch East Indies, for the British are better able to supply machinery and other manufactures of iron and steel than are the Dutch. Explain why.

Belgian Congo

Another tropical land. Turn to the map of Africa on page 98 and find Belgian Congo. What great river basin lies wholly in this possession of the Belgian people? How can you prove by the map that this basin is another tropical land?

The Congo Basin is hot and rainy, and much of it is covered with thick, tropical forests. Railroads are so hard to build in such a region that the Congo River and its tributaries are the chief highways of travel and transportation. Ocean ships go up the Congo as far as the town of Matadi, but they cannot go farther upstream on account of rapids in the river. From Matadi to Leopoldville, the capital, a railroad has been built. From Leopoldville the Congo is navigable for 980 miles to Stanleyville, where there are more rapids and another railroad.

The native people. The natives of Belgian Congo are negroes who live in little villages along the rivers and get their food by raising a few vegetables and fruits, and by fishing. They also gather the fruit of the oil palms which grow wild in the forests, and sell the kernels to European traders.

Handicaps to plantation farming. The Belgians have found it difficult to establish plantations in the Congo basin because it is hard to clear land in the tropical forests and it is almost impossible to get the natives to

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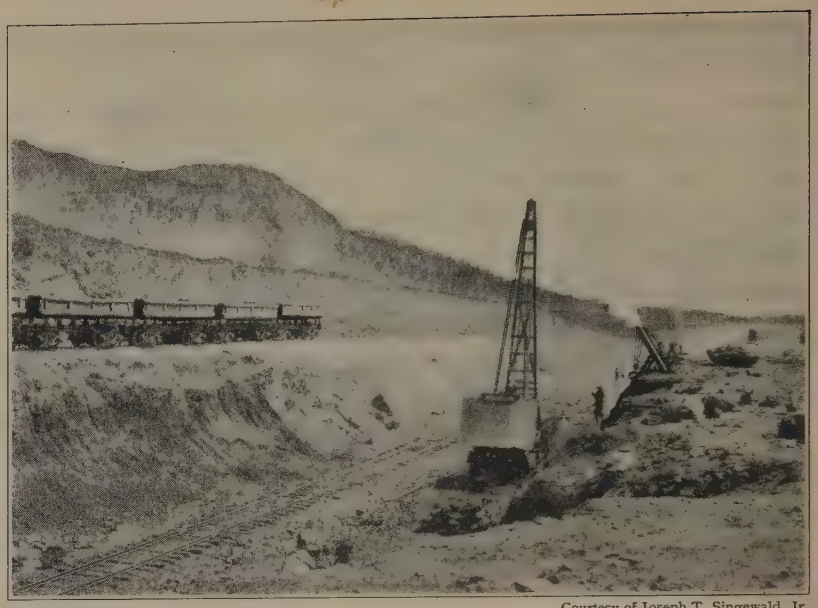
Figure 213. A laborer on a rubber plantation in Sumatra fastening a cup to a rubber tree to catch the latex. This plantation belongs to a great rubber-manufacturing company of the United States.

Courtesy of United Christian Missionary Society

Figure 214. A street in a village in Belgian Congo, showing the houses of some of the overseers of a plantation.



Courtesy of Joseph T. Singewald, Jr.

Figure 215. A copper mine in the southern part of Belgian Congo. The copper here is mined in open pits by means of steam shovels. Belgian Congo ranks high among the copper-producing countries of the world.

work steadily. Their needs are so few that they care very little about earning money, and they prefer the easy life in their villages.

At present the most important plantations are those where oil palms are grown and the kernels crushed to extract the oil. Palm kernels gathered from the wild trees by the natives and palm oil from the plantations are valuable exports. *See Figure 214.*

Congo mines. From the map on page 98 name the mineral products of Belgian Congo. The leading mining district is the one in the south, and the copper mined there is the most valuable export of the country. Gold and diamonds also are exports of some importance. *See Figure 215.*

The trade of Belgian Congo. Although small quantities of many different products are exported from Belgian Congo, copper, palm oil, and palm kernels are by far the most valuable. Among the imports cotton goods hold a high place. Can you explain why? About half the trade is with Belgium. Our own country is a good customer for palm oil, and it supplies some of the imports.

Looking forward. Belgian Congo is much larger than the Dutch East Indies; it is not yet crowded with people; its mineral wealth is great; and it can be made to produce large quantities of plantation products, such as rubber, cacao, and cotton. Its development has only just begun, and in time it may prove as valuable to the Belgians as the East Indies are to the Dutch.

Greenland and the Faroe Islands

The largest island. If we except the island continent of Australia, Greenland is the largest island in the world. It is also an almost useless island; for nearly all of it is north of the arctic circle, and most of it is covered with ice and snow which never melt away.

A cold, frozen land. The interior of Greenland is a vast plateau of ice. At places the surface is 9000 feet above the sea, and the ice is probably thousands of feet thick. This great ice cap is like those which once covered the northern parts of North America and Europe. The ice moves slowly outward from the center of the island, and at places where

it reaches the sea it breaks off in huge blocks, forming icebergs.

Off the east coast of Greenland there is a current of water from the Arctic Ocean which makes the climate of that coast so cold that no one can live there. On the west coast there is a narrow belt of tundra which is covered with green grass during the short summer. Perhaps this explains why Eric the Red, the Icelander who discovered the island, called it Greenland.

Figure 216. Denmark and Norway and their possessions.

The people of Greenland. There are only a few thousand people in this cold, frozen island, and nearly all of them are Eskimos. They live along the west coast and get their living by fishing and by hunting seals, walruses, blue foxes, and other animals. The few Danes who live among them are traders and the officials who carry on the business of the government.

In the summer, ships from Denmark carry supplies to the Greenlanders and take back a few furs and small quantities of fish. But the people on the island are so few that trade between the colony and the mother country amounts to very little.

The Faroe Islands. Small as these islands are, they have more people than Greenland, and they are of greater value to Denmark. Some of the people raise sheep, and wool and mutton are exported. Most of the people, however, are fishermen, and salted codfish and cod-liver oil are the leading exports of the islands.

ICELAND

Relations with Denmark. For many years Iceland was a possession of Denmark, but in 1918 the Danes gave the Icelanders their independence. The two countries are still closely associated, however; for they have a joint committee which studies the problems of both countries, and the Icelanders recognize the Danish king as their king.

The island and its people. Iceland is a mountainous island close to the arctic circle. Because of its location and the height of its mountains, much of the island is covered with ice and snow, and there are almost no trees. Many of the higher mountain peaks are volcanoes, and the island also has geysers and hot springs. Nearly all the people live in the small lowland regions in the southwest.

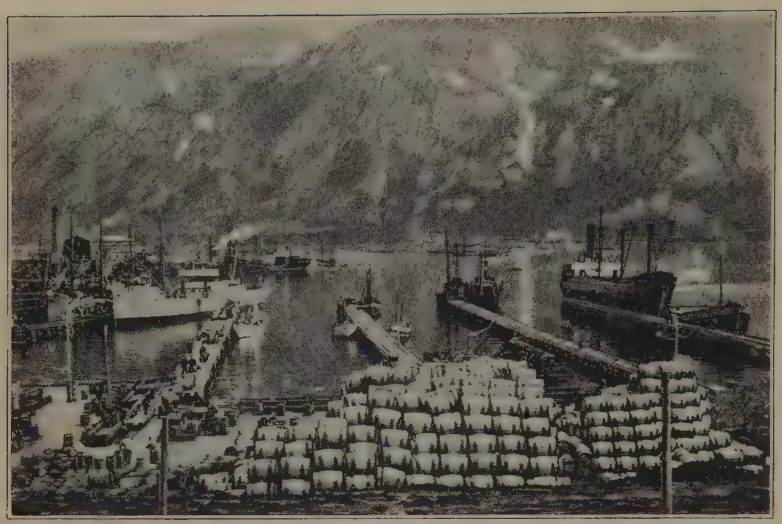


Figure 217. A cod-fishing station on the mountainous coast of Iceland, where large quantities of cod are salted and dried for export. The barrels in the picture are filled with salted codfish.

Iceland is too cold for much agriculture, but the people raise large numbers of sheep. The waters surrounding the island are rich fishing grounds, especially for cod, and therefore many of the Icelanders are fishermen. *See Figure 217.*

The largest town of Iceland is Reykjavik, the capital and seaport. The leading exports of Reykjavik are fish and wool, and the leading imports are lumber, foodstuffs, fuels, and manufactured goods. Most of the trade is with Denmark and Great Britain. Can you think why?

Some things to explain. Explain why

1. The East Indies are possessions which any European country would be glad to own.
2. At present Belgian Congo is less valuable to the Belgians than the East Indies are to the Dutch.
3. Belgian Congo will probably become a more valuable possession in the future.
4. Greenland is of very little value to the Danes.
5. Belgium and the Netherlands export large quantities of cotton goods to their colonies.

Map work. Color Belgian Congo on the map of Africa which you are making.

Finding reminders. 1. Name at least one export product of the Dutch East Indies which reminds you of each country listed below:

Cuba	Ceylon
Brazil	Porto Rico
Mexico	British Malaya

2. Name a river basin in South America of which the Congo Basin reminds you. Why can ocean ships go much farther upstream on the principal river of that basin than they can go on the Congo River?

A combination test. In each sentence you are to choose the correct word or phrase from those in parentheses, and then complete the sentence by giving reasons.

1. Much of the polder land in the Netherlands is used for (fruit-growing) (dairying) (sheep-raising) because _____.
2. Much of the farm land in Denmark is used for (forage crops) (orchards) (market gardens) because _____.
3. The abundant (zinc) (coal) (iron ore) in Belgium is of great value to the people because _____.
4. The Dutch and the Danes carry on much (lumbering) (mining) (fishing) because _____ _____.
5. The seaport of greatest importance in the small North Sea countries is (Copenhagen) (Rotterdam) (Antwerp) because _____.
6. The principal crop raised by the natives of the Dutch East Indies for their own use is (rice) (sugar) (coffee) because _____.

Can you name these cities? Name each city described below:

1. The capital of Belgium.
2. The chief seaport of Belgium.
3. The capital and chief seaport of Denmark.
4. The second most important port in the Netherlands.
5. The capital of the Netherlands.
6. The capital and chief seaport of the Dutch East Indies.

De Cou from Ewing Galloway, N. Y.

Figure 218. One of the beautiful fiords on the western coast of Norway. Notice how steeply the mountains rise from the water. The fiords are narrow, but they are so deep that large ships such as the one in the picture can sail far inland on them. Where in the Americas could you see coasts somewhat like this one?

SCANDINAVIA AND THE BALTIC SEA COUNTRIES

I. NORWAY AND SWEDEN

Foreword. The two countries which occupy the Scandinavian Peninsula of northwestern Europe are the kingdoms of Norway and Sweden. Find these countries on the map on pages 192–193. How do they compare in size with Belgium, the Netherlands, and Denmark?

Although the two Scandinavian countries are more than seven times as large as the three small North Sea countries, they have less than half as many people. Sweden has only 38 people to the square mile, and Norway only 23. Yet, in spite of the sparse population, several thousand people leave Norway and Sweden each year to make new homes in the United States. Our north-central states, especially, have large numbers of people of Swedish and Norwegian descent.

All these facts suggest that Norway and Sweden cannot support so many people as the countries farther south in Europe. Do you know why? Watch for the reasons as you study this chapter.

Map work. Before you read further, turn to page 225 and work out the map studies in Group I there.

The mountains of Scandinavia. The mountains which make up a large part of the Scandinavian Peninsula are very old. For long ages streams and glaciers have been wearing down their summits and deepening their val-

Swedish State Railways Travel Information Bureau

Figure 219. A boat passing through the Göta Canal. The trip across southern Sweden by the river, lake, and canal route takes two and a half days. The boats carry passengers and small freight.

leys. The snow fields and glaciers which you can see in the Scandinavian highlands today are reminders of the great ice cap which formed there long ago and spread over the northwestern part of Europe.

The fiord coast of Norway. Along the western coast of Norway the mountains rise steeply from the sea. Long ago this coast sank, and the sea entered the lower parts of the river valleys. Many of the valleys were steep-walled canyons, and today they form deep, winding fiords which lead far into the land. *See Figure 218.*

The coast is fringed with thousands of rocky islands, and between the islands and the coast there is a deep "inside passage" for ships, like the one along the coast of southeastern Alaska. This waterway is the principal highway of travel and transportation between the cities and towns along the coast, for there is no railroad connecting them.

Thousands of tourists visit western Norway every summer, for the scenery along the coast is beautiful. Among the sights which they enjoy are the waterfalls which tumble down the steep, rocky walls of the fiords.

A "land of the midnight sun." Many of the tourists go to North Cape to see the midnight sun. Find North Cape on the map on page 224 (*H 1*). In that latitude the sun remains above the horizon continually for nearly three months during the summer. Day after day it appears to swing around the earth, rising highest in the southern part of the sky at noon, and sinking lowest in the northern part of the sky at midnight; but it does not set.

The length of time during which the sun does not set varies from one day on the arctic circle to six months at the north pole. In the winter there is a period of equal length during which the sun does not rise. This period is called the "winter night."

The lowlands of Scandinavia. Turn to the map on page 224 and notice how little of the lowland region of Scandinavia is in Norway. What does that suggest about the importance of farming in Norway compared with Sweden?

The Scandinavian lowlands have a rolling surface with many small hills. Some of the hills are of hard rock, and others are made up of loose rock materials left by the great ice sheet of long ago. There are also many lakes which occupy hollows left when the ice melted away.

Use the map on page 224 to show how you might travel by boat from Göteborg (*E 4*) across southern Sweden to the Baltic Sea. Through what two lakes should you pass? through what canal? This inland waterway is too shallow for large ships, but it is used by boats such as you see in Figure 219.

Some differences in climate. Because of their latitude, the Scandinavian countries have a cool climate; but they are not so bitterly cold in winter as the part of Europe

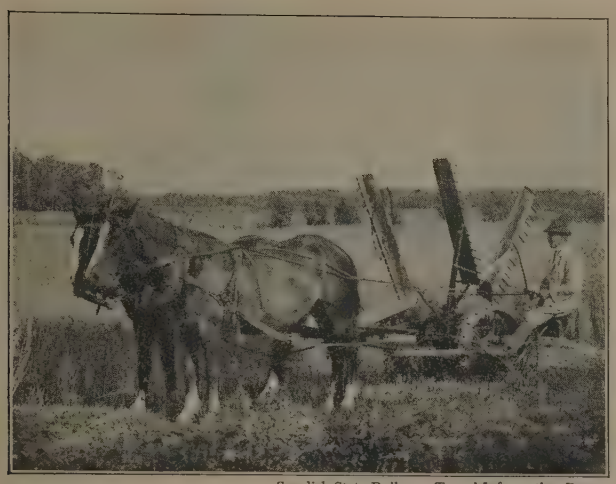


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Figure 220. Harvesting grain in southern Sweden. In this part of Scandinavia the surface is level enough to permit the farmers to use farming machinery.

Photograph by Wilse

Figure 221. Haying on the west coast of Norway. Here the land is so mountainous and the patches of level ground so small that farm work is done by hand.

farther east. That is because the peninsula is so nearly surrounded by water. The western coast of Norway is warmed by the westerly winds that blow over the Gulf Stream Drift, and its harbors do not freeze over in the winter. This coast is also very rainy. Explain why.

Sweden has colder winters and warmer summers than Norway because it is on the leeward side of the peninsula, or the side away from the westerly winds. Figure 56 (p. 61) shows that it also has less rain than Norway. Give a reason for this.

Waste land. More than half of Norway is waste land — too rough for farming and too cool for the growth of valuable trees. Sweden also has much waste land, but not so large a part of the country is useless. Explain why.

Farming in Sweden. Since nearly all the lowland region of the Scandinavian Peninsula is in Sweden, more people can make a living by farming in that country than in Norway. Most of the farms are in the broader, southern part of the lowland. Why?

Because of the cool climate, the Swedish farmers raise more oats, rye, and barley than wheat. On nearly all the farms you will see cattle, and you will find that the farmers raise hay and root crops, such as turnips and carrots, to feed the cattle in the winter. Potatoes also are an important crop. *See Figure 220.*

The southernmost part of Sweden is an important dairying section, and the farms there will remind you of Denmark. Most of the dairy farmers keep pigs as well as cows, and many raise sugar beets as a money crop.

Farming in southern Norway. Norway is so mountainous that less than four per cent of the land is used for crops. The best farm lands are in the lowland region and in the valleys in the southern part of the country. There the people carry on farming much as their neighbors in Sweden do.

West-coast farms. When you were studying "Home Life in Far-away Lands," you learned about the people who live on little farms along the fiords of western Norway. They keep a few cattle, sheep, and goats. In the summer the older girls take the cattle to pastures high in the mountains. The men and boys stay at home, raising grain, potatoes, and forage crops on the farms. They also cut every bit of hay they can find, and store it in the barns for winter feed for the live stock. *See Figure 221.*

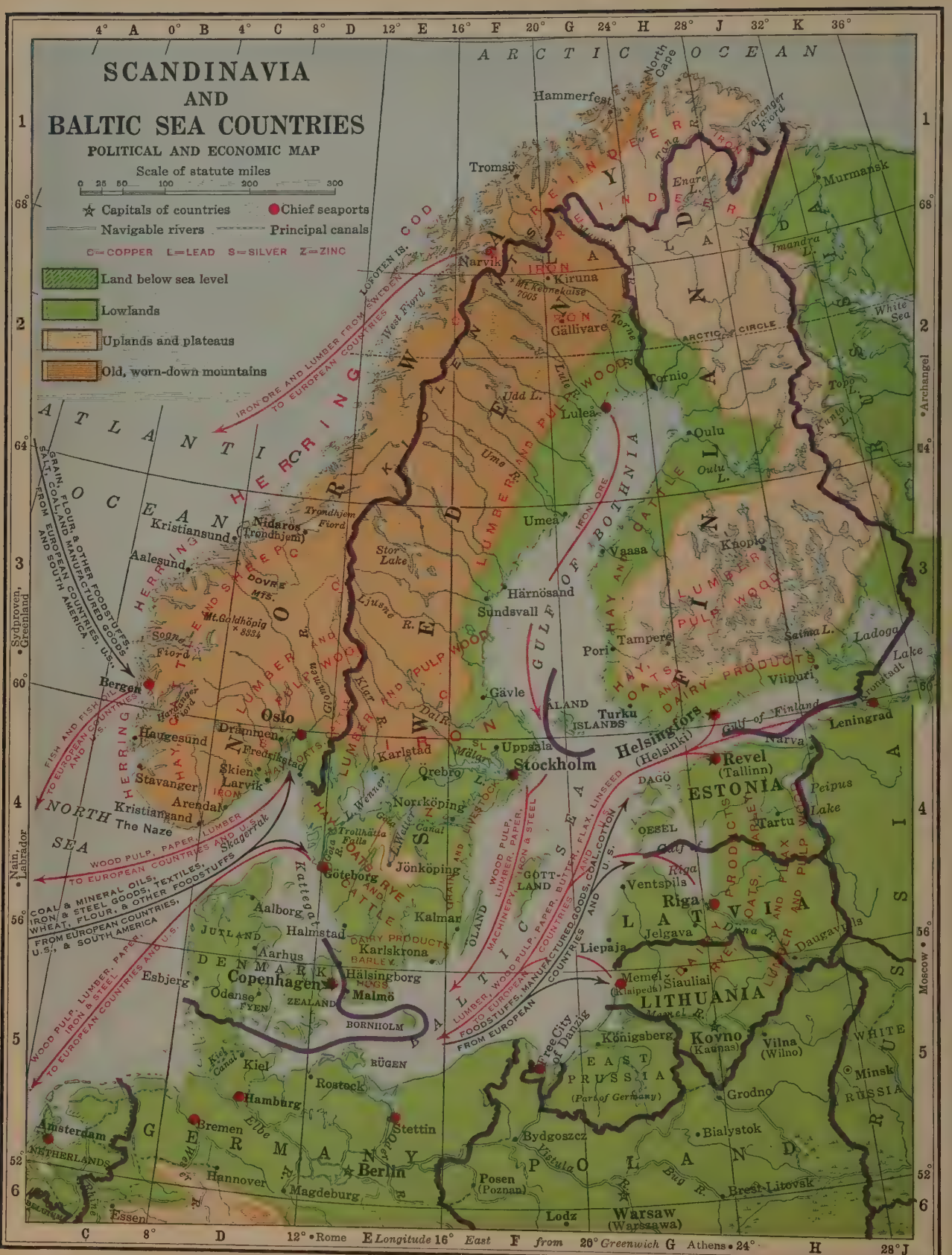

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Figure 222. One of the many pulp mills in Sweden. In these mills large quantities of pulp-wood logs from the forests are used to make wood pulp. Much Swedish wood pulp is exported to other countries, and much is used in Sweden itself to make newsprint (paper for printing newspapers), wrapping paper, and cardboard.

Map discoveries. Now work out the map studies in Group II on this page and you will discover some other kinds of work in Scandinavia.

Scandinavian resources. If the people of Norway and Sweden had to depend on farming alone, both countries would be poor; for not even Sweden has any large surplus of farm products for export. Fortunately, both countries have other resources more valuable than their farm lands. In Norway these resources are fisheries and forests; and in Sweden, forests and mines.

Forests and forest work. About a fourth of Norway and more than half of Sweden are covered with valuable forests. The trees are largely pines, spruces, and other softwoods which are valuable for lumber and pulp wood. In both countries thousands of men work in the forests in the winter, cutting down the trees and getting the logs to the rivers. In the spring, when the ice melts, the logs are floated down the streams to sawmills and pulp mills. *See Figure 222.*

Turn over to page 226.

MAP STUDIES

Group I

1. Which of the two Scandinavian countries borders the Atlantic Ocean? 2. Which one borders the Baltic Sea and the Gulf of Bothnia? 3. Which country is almost entirely mountainous? 4. How should you describe the coast line of that country? 5. Which Scandinavian country has a considerable extent of lowland?

6. Trace the arctic circle across Norway and Sweden. 7. What does that suggest about the climate of the two countries? 8. In which country do you think more people can make a living by farming? Why? 9. In which country do you think the people make greater use of the sea? Why?

Group II

1. What do you find among the imports of Norway and Sweden to show that the farms of those countries do not provide all the food that the people need? 2. What do you find among the exports to prove that forest work is very important in both countries? 3. In which country do you think fishing is very important? Why? 4. Which country exports a product of its mines?

Courtesy of Norwegian Government Railways Travel Bureau

Figure 223. Norwegian fishermen hauling up a net full of herring. In small boats such as this the fishermen go out in all sorts of weather to catch herring and other kinds of fish along the coast.

Industries depending on forest work. Sawmills, pulp mills, and paper mills are found all through southern Norway and Sweden, and along the Swedish coast of the Gulf of Bothnia. From these mills large quantities of lumber, wood pulp, and paper go to the leading ports for export to Great Britain, France, and other European countries where the forests have been largely cut down. Our own country is a good customer for Scandinavian wood pulp. Can you explain why?

Another Scandinavian industry which depends on forest work is the making of safety matches. Millions of boxes of these matches are exported each year to many different countries of the world.

Norwegian fisheries. In Norway, fishing is more important than any other kind of work, and fish and fish products are the most valuable exports. There are several reasons for this: (1) the land is so poor for farming that the people are forced to make use of the sea; (2) the neighboring waters are rich in fish; (3) the irregular coast line provides many good harbors; and (4) fishing can be carried on the year round because the harbors do not freeze over in the winter.

The chief kinds of fish caught by the Norwegians are herring, cod, mackerel, and salmon. The best cod-fishing grounds are near the Lofoten Islands. Find these islands on the map on page 224 (*E1*). Herring are caught all along the coast, mackerel chiefly in the south, and salmon in the fiords. *See Figure 223.*

Preparing fish for export. Some of the fish are exported fresh, but much greater quantities are frozen or preserved in other ways. Cod are salted and dried, as they are in New England. The larger herring are salted or smoked, and the little ones are preserved in olive oil or other vegetable oils and sold in tins as Norwegian "sardines." All this work gives employment to large numbers of people.

The center of the fishing industry. On the map on page 224 find Bergen (*C3*). This is the second largest city in Norway, and the business center of the fishing industry. It is also the great port of export for Norwegian fishery products. *See Figure 224.*

Great Britain and the other densely populated countries of Europe provide excellent markets for Norwegian fish. Can you explain why? Large quantities of preserved fish, such as smoked herring and Norwegian sardines, are also sent to the United States and other distant countries.

Why fishing is less important in Sweden. The Swedish people carry on much less fishing than the Norwegians because the Baltic Sea and the Gulf of Bothnia are less salty than the Atlantic Ocean, and the fish that live in their waters are not the best kinds for food. Furthermore, these inland waters freeze over for several months each winter, and therefore fishing can be carried on only part of the year.

Courtesy of Norwegian Government Railways Travel Bureau

Figure 224. The outdoor fish market at Bergen, showing some of the fishing boats. Here the people gather to buy fresh fish when the boats come in. The buildings at the right belong to fish merchants. Study the imports of Bergen on the map (p. 224). What do you find among them that is used in preserving fish?

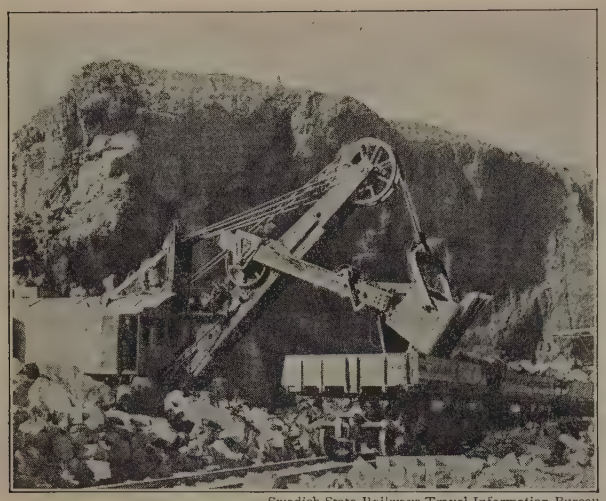
Sweden's wealth of iron ore. On the map on page 224 find the two parts of Sweden where iron ore is mined. In the Lapland district, north of the arctic circle, Sweden has one of the best iron-ore fields of Europe. Unfortunately, Sweden has no coking coal, and so the greater part of the iron ore that is mined there is exported to Germany, Great Britain, and other countries where coal is plentiful. *See Figure 225.*

On the map on pages 192–193 find the railroad which connects the iron mines of northern Sweden with the Atlantic coast and the coast of the Gulf of Bothnia. During the summer the ore is sent to the Swedish port of Luleå (*G2*) for shipment to southern Sweden or for export to other countries. But in the winter, when the Gulf of Bothnia is frozen over, the ore is shipped from the Norwegian port of Narvik (*F1*). Explain why.

Iron-and-steel manufacturing. In spite of the lack of coal, the iron-mining district which is located in southern Sweden has many blast furnaces and steel mills. The manufacture of iron began here long ago because the ore was abundant and the forests supplied charcoal for fuel. Coking coal is now imported from Germany and Great Britain, but some of the finest Swedish iron is still made with charcoal.

Much of the Swedish iron and steel is exported to the great manufacturing countries of Europe, and much is used at home for the manufacture of machinery and other iron and steel products. Great Britain is the best customer for Swedish steel, and large quantities are used in the manufacture of cutlery at Sheffield.

Norway's mineral resources. Norway has some iron and other metal ores; but, like



Swedish State Railways Travel Information Bureau

Figure 225. Mining iron ore in an open-pit mine in the Lapland district of Sweden. The steam shovel shown in the picture was manufactured in our state of Ohio.

Sweden, it has no coal for smelting. The lack of coal and the difficulty of building railroads in the mountains have held back the development of mining and the use of the mineral resources.

A source of coal for Norway. On Figure 216 (p. 219) find the group of islands known as Svalbard or Spitsbergen. These islands belong to Norway. They are so far north that they have few people, but they are valuable to the Norwegians because they have large quantities of coal. The coal is mined and exported to Norway only in the summer, for during the winter ships cannot reach the islands on account of the ice.

Using water power instead of coal. Because Scandinavia is mountainous and has much rain, it has many swift-flowing streams which furnish water power for making electricity. Both Norway and Sweden have large numbers of hydroelectric plants, which provide electricity for light, for telephones, and for power for street cars, railroads, and manufacturing plants. Thus the streams make up in part for the lack of coal. *See Figure 226.*

Two thirds of all the power used in Sweden comes from hydroelectric plants, and even more electric power is used in Norway. In both countries, but especially in Norway, electricity is used for the manufacture of chemicals and fertilizers. Do you remember the fields in Chile where nitrate is mined for fertilizer? In Norway and Sweden the people have a wonderful electrical process which takes a gas called nitrogen from the air and transforms it into nitrate.

Three important cities. Turn to the map on page 224 and find Oslo (*D4*), Göteborg (*E4*), and Stockholm (*F4*). Which of these cities is the capital of Norway? Which is the capital of Sweden? In what way are all three of these cities alike?

Oslo is the capital and largest city of Norway. It has an excellent harbor at the head of a fiord and is the leading seaport of the country. What do you see in the location of Oslo which explains why it is a larger city than Bergen?

Stockholm, the capital and largest city of Sweden, is an important seaport and one of the most beautiful cities of Europe. The center of the city is located where a number of short waterways lead from Lake Mälar to the Baltic Sea, and part of the city has been built on peninsulas and islands. *See Figure 227.*

Courtesy of Norwegian Government Railways Travel Bureau

Figure 226. A hydroelectric plant on the Hardanger Fiord in Norway. Electricity from power plants like this is sent over wires to many cities and towns in Norway.

Swedish State Railways Travel Information Bureau

Figure 227. An airplane view of the heart of Stockholm, which has been the capital of Sweden for 700 years. The large square building in the center is the royal palace, where the king of Sweden lives, and to the left of the palace are the Houses of Parliament. The winding harbor of Stockholm is lined with stone wharves, and small steamers, ferryboats, and launches carry people from one part of the city to another.

Stockholm has docks for ocean ships, and wharves for smaller steamers which run to other ports along the coast. In the winter, ice-breakers are used to keep the harbor open for shipping.

From Stockholm small boats go down the coast to the entrance to the Göta Canal and from there through the inland waterway to Göteborg. This city is the leading port of Sweden. What reason can you give for the fact that more Swedish trade passes through this port than through Stockholm?

Norwegian dependence on the sea. What reasons can you give for the fact that more people can make a living on the land in Sweden than in Norway? Why have the Norwegians been forced to make greater use of the sea than the Swedish people?

From the earliest days the Norwegians have been famous seafaring people. Their country is so poorly suited to farming that long ago they turned to the sea in order to obtain part of their food by fishing. Fishing led them to build boats and to venture farther and farther from land. Thus they became skillful seamen. Before the year 900 the Norsemen had made settlements in Iceland, and before the year 1000 Eric the Red had established a settlement in Greenland. It is interesting to remember that that was five hundred years before Columbus made his first voyage of discovery.

Today, as you know, Norway is famous for its fisheries. In addition to all its fishing boats Norway has the largest fleet of whaling ships in the world. These ships go to the Far South to catch whales in the icy waters near Antarctica, and they obtain millions of dol-

lars' worth of whale oil each year. Whale oil is obtained by heating with steam the blubber, or fat, of whales. This work is done on the whaling ships. The oil is used for dressing leather, for lubricating, or oiling, machinery, and for many other purposes.

Norway has a large fleet of merchant ships also. Some of these ships carry goods back and forth between Norway and other countries, but many of them are carriers for other nations. They are owned by shipping companies in Norway, and they earn money for their owners by carrying goods between the ports of various foreign countries.

A trade test. 1. From the map on page 224 prove that (1) the leading exports of Sweden come directly or indirectly from its forests and mines; (2) that the leading exports of Norway come directly or indirectly from its fisheries and forests.

2. Explain why the Scandinavian people import (1) wheat and other foodstuffs; (2) coal and mineral oils; (3) many kinds of manufactures.

Making comparisons. The four sentences below make comparisons between Norway and Sweden. Complete each sentence by naming Norway and Sweden in the proper places and giving reasons for the fact stated.

1. Farming is more important in _____ than in _____ because _____.
2. Fishing is more important in _____ than in _____ because _____.
3. Mining is more important in _____ than in _____ because _____.
4. Lumbering is important in _____ and even more so in _____ because _____.

II. FINLAND AND THE BALTIC COUNTRIES

Foreword. East of the Baltic Sea and the Gulf of Bothnia are the republics of Finland, Estonia, Latvia, and Lithuania. Find them on the map on page 224. Estonia, Latvia, and Lithuania are often called the Baltic countries. Judging from the products and exports, what two kinds of work do you think are most important in Finland and the Baltic countries?

Finland

Handicaps to farming. The map shows that much of Finland is an upland region. The surface of this region is so hilly and rocky that it is not good farming land. Along the coast there are lowlands, but even these are not very well suited to farming because they have coarse glacial soils. Other handicaps to farming are the cool climate and the short growing season. Nevertheless, many of the people of Finland are farmers. Their chief crops are hay and oats, and they keep a good many cattle. In the southern part of the lowland region dairy farming is important, and considerable quantities of butter are exported. *See Figure 228.*

The greatest resource. When you were studying the map, did you notice the large number of lakes in the southern part of the upland of Finland? The land in this lake region is covered with thick forests of pine and spruce trees, which are the greatest natural resource of Finland. Thousands of men work in the lumber camps, and many others in the sawmills, pulp mills, and paper mills. Lumber of various kinds is by far the most valuable export of Finland, and wood pulp and paper are next. *See Figure 229.*

Helsingfors. On the map on page 224 find Helsingfors, or Helsinki, as the Finns call it (*H 3*). This is the capital, the largest city, and the chief seaport of Finland. In what part of the country is it located? On what body of water?

The Gulf of Finland, like the Gulf of Bothnia, freezes over during the winter, and for several months the ice is so thick at Helsingfors that no shipping can be carried on.

Figure 228. Cows grazing on a farm in the southern part of Finland. The cool, moist climate of Finland is well suited to dairy farming, for the grass remains fresh and green all summer long, and hay grows well. Can you name a part of the United States which is well suited to dairy farming for much the same reasons?

Lapland. The northern part of Finland, Sweden, and Norway is called Lapland because it is the home of the people known as the Lapps. It is part of the *tundra* of northern Eurasia, — the belt of cold, treeless land which borders the Arctic Ocean. The Lapps are wandering people who make their living by keeping herds of reindeer, which provide them with milk, meat, clothing material, and means of transportation.

Estonia, Latvia, and Lithuania

Three small countries. The small countries of Estonia, Latvia, and Lithuania are called the Baltic countries because of their location on the eastern side of the Baltic Sea. They are low countries, covered with glacial soils left by the great European ice sheet.

Farming and forest work. Although the soils are rather poor, most of the people of the Baltic countries make their living by farming. They cannot grow wheat because the climate is too cold, but they can raise such crops as rye, oats, barley, and potatoes. Many of them are dairy farmers, and butter is one of the leading exports. Another important farm product is flax, which grows well in the cool climate. Some of the flax is grown for the fiber, and some for the seed, and both products are exported.

Nearly one fourth of all the land in these countries is forested; and here, as in Finland and Scandinavia, lumber, wood pulp, and paper are valuable exports.

The leading cities. The three largest cities of the Baltic countries are the capitals. Name each one from the map on page 224. Which two are Baltic seaports? Which one is an inland city?

Riga is the largest of the three cities and a more important seaport than Revel (Talliñn). Its harbor is seldom closed by ice for more than a few days in the winter, while the harbor of Revel is sometimes closed for weeks at a time. Riga is also an important center for the manufacture of linen goods from home-grown flax, and cotton goods from cotton imported from the United States. *See Figure 230.*

Kovno is the smallest of the three capital cities, chiefly because it is an inland city rather than a seaport. Lithuania has a shorter coast line than the other Baltic countries, and Memel is its seaport. Find Memel on the map on page 224 (*G5*).

Figure 229. A sawmill in Finland, showing the log pond. The wooden runways in the distance support moving belts which carry the logs into the mill.

Photograph by Ewing Galloway, N.Y.

Figure 230. A view along the wharves at Riga in the winter time. The ship nearest you is being loaded with lumber which is to be carried to England.

Can you give these names? Give the name of each of the following:

1. The gulf between Finland and Sweden.
2. The islands near the best cod-fishing grounds of Norway.
3. The canal which forms part of the inland waterway across southern Sweden.
4. The name given to the northern part of Finland, Sweden, and Norway.
5. The sea between Sweden and the Baltic countries.
6. The gulf south of Finland.
7. The group of islands in the Far North belonging to Norway.

A ship test. Eight ships are steaming away from ports of Scandinavia and the Baltic Sea countries. The country which each ship has just left is given in the first column below, and the ship's cargo is given in the second column, opposite the name of the country. Name the port where each ship was loaded.

		(Port)
Norway	fish	_____
Finland	newsprint	_____
Sweden	iron ore	_____
Estonia	butter	_____
Sweden	machinery	_____
Latvia	lumber	_____
Lithuania	flax	_____
Norway	wood pulp	_____

Special credit work. 1. Look at home and in the stores to see how many things you can find that came from the Scandinavian and Baltic countries. 2. Try to make a collection of safety-match boxes from these various countries.

Sentences to complete. Complete each sentence below by giving reasons:

1. The greater part of the land in Norway, Sweden, and Finland is not well suited to farming because _____.
2. These countries export large quantities of lumber, wood pulp, and paper because _____.
3. Norway and Sweden have much water power because _____.
4. Water power is especially valuable in these countries because _____.
5. The Norwegians make much use of the sea because _____.
6. Norway, Sweden, and Finland cannot support so many people as the countries farther south in Europe because _____.

Matching countries and capitals. Match correctly the countries and capital cities below:

Estonia	Helsingfors
Finland	Kovno
Latvia	Oslo
Lithuania	Revel
Norway	Riga
Sweden	Stockholm

By Ewing Galloway, N.Y.

Figure 231. Plowing land for winter wheat on a large farm in the Plain of Hungary. Notice how level the surface is in this region of central Europe. Find the Plain of Hungary on the map on page 60. What is its elevation? What does Figure 56 show you about the rainfall of the plain with reference to farming?

THE COUNTRIES OF CENTRAL EUROPE

I. GETTING ACQUAINTED WITH CENTRAL EUROPE

Foreword. Turn to the map on pages 188–189 and find Germany, Poland, Czechoslovakia, Switzerland, Austria, and Hungary. The total area of these six countries of central Europe is less than one sixth of the area of the United States, and yet they have about 125,000,000 people. How does that compare with the number of people in our entire country? What can you say, then, about the density of population in central Europe?

Germany is the largest and by far the most important of the central European countries, and the German language is used by more than half of all the people in this part of the continent. It is the language not only of Germany but of Austria and a large part of Switzerland. The people in the western part of Switzerland speak French, and some of those in the southern part speak Italian. The Hungarians have a language of their own, and so have the Poles, the Czechs, and the Slovaks.

Although the nations of central Europe differ from one another in language and in many other ways, they are all energetic and progressive, and they are making excellent use of their natural resources. As you study this chapter try to discover what those resources are, and how, by using them wisely, so many people can make a living in this part of Europe.

Something to do. Many people in our country trace their family history back to the countries of central Europe. See if there are any pupils in your class who were born in central Europe or whose families came from there.

Some differences in surface. As we study about the countries of central Europe we shall find that differences in the surface of the land have much to do with the life and work of the people. For example, what differences in the land and its use are shown in Figures 231 and 232?

In order to picture to yourself the many differences in surface in central Europe, use the map on pages 188–189 to answer the following questions:

1. What two of the central European countries have a large share of the Central Plains of Europe? 2. What kind of work is important in those plains? 3. How does the surface in southern Germany and Poland differ from the surface of the northern plains? 4. What country of central Europe has an upland region surrounded by a ring of old, worn-down mountains? 5. What do you find on the map to show that the uplands of Germany, Poland, and Czechoslovakia are not too rough for farming? 6. What reason have you to think there may be industrial centers in these upland regions?

7. What region of young, rugged mountains does Poland share with Czechoslovakia? 8. What mineral wealth have those mountains? 9. In what country is the central portion of the Alps? 10. What country is made up largely of an eastern extension of the Alps? 11. What mineral wealth have the mountains of Austria?

12. Which of the central European countries lies almost wholly in a lowland region which is surrounded by rugged mountains? 13. How do you think most of the people of the Plain of Hungary get their living?

The northern plain of Germany and Poland. The map shows clearly that farming is very important in the northern plain of Germany and Poland. This plain has a gently rolling surface, with many low hills and many lakes, ponds, and marshes. It is a region covered with glacial soils left by the great European ice sheet of long ago. For the most part these soils are sandy and poor, and in order to make them produce good crops the farmers have to enrich them with large quantities of fertilizers. Study the map (pp. 188–189) and see if you can discover a mineral resource of Germany which is of help to the farmers.

In Germany and western Poland large areas which were once marshes have been drained and turned into good farm lands. But in eastern Poland the swamps and marshes have not been drained, and there are great stretches of land too wet for farming. Find these wet lands on the map on pages 188–189.

Higher regions in the south. South of the northern plain is a belt of uplands and old, worn-down mountains. The soils of the uplands are good; and although these regions are rougher than the northern plains, they have broad valleys which provide excellent farm lands.

Turn to the map on pages 188–189 and find some names in central Europe which suggest that the mountains are forested. Almost all the land that is level enough for farming has been cleared, but there are forests on the mountain slopes and in the rougher parts of the uplands. These are cared for so that they produce regular "crops" of timber.

The Alps and the Carpathians. South of the uplands of Germany are the Alps, which extend from southeastern France through Switzerland and northern Italy into Austria. These are the highest mountains of Europe, and, as you know, there are snow fields and glaciers among their summits. Farther northeast are the Carpathians. They are much lower than the Alps, and they are forested nearly to their summits.

The slopes of these rugged mountains are for the most part too steep for farming, and the higher parts of the Alps are too cool for any crops. The lower slopes of the Alps are covered with forests, and above the tree line there are grassy pastures where cattle, sheep, and goats graze during the summer.

Courtesy of Swiss Federal Railroads

Figure 232. Cattle grazing on the high pastures in the Swiss Alps. What reason can you give for the fact that far more land in the Alps is used for grazing than for the raising of crops? The snow-capped mountain peaks shown in the picture rise to elevations of more than 13,000 feet above the level of the sea.

The Plain of Hungary. The Plain of Hungary will remind you of our prairies; for it is a grassland with few trees except along the streams, and it is one of the best farming regions of Europe. What other countries share this plain with Hungary?

The rainfall of central Europe. Figure 56 on page 61 shows that very little of central Europe has less than 20 inches of rain a year. That is because there are no ranges of mountains running from north to south in western Europe as there are in the western part of our country, and therefore there is nothing to prevent the westerly winds from carrying moisture far inland from the Atlantic Ocean. Central Europe, then, has plenty of rain for farming.

The heaviest rainfall is in the mountainous regions, especially in the Alps. Explain why. The Alps are so high that much of the annual, or yearly, rainfall comes in the form of snow. That accounts for the snow fields and glaciers which never melt away.

Temperature conditions. Central Europe has greater extremes of temperature than western Europe because it is farther from the Atlantic Ocean. For example, the summers are hotter and the winters colder in Berlin, the capital of Germany, than in London, and there are still greater differences between the summer and winter temperatures at Warsaw, the capital of Poland.

Wherever you travel in the temperate zones you will find that inland regions have greater extremes of temperature than coastal regions. That is because they do not have the warming influence of the oceans in winter or the cooling influence in summer.

Length of growing season. The growing season in the northern plain of central Europe is long enough for grains such as wheat, oats, and rye to ripen. The uplands have a growing season of about the same length as the northern plain; for while they are somewhat farther south, they are higher.

The longest growing season in central Europe is in the Plain of Hungary, and the shortest growing season is in the higher parts of the Alps in Switzerland and Austria. Give reasons for these facts.

Central Europe as a source of rivers. The maps will show you that several of the longest and most important European rivers rise in the higher parts of central Europe. You already know that the Rhine and the Rhône rise in the Swiss Alps. Which of these two rivers flows northward to the North Sea? In what country is the mouth of this river?

On the map on pages 188–189 find each of the following rivers and trace them from source to mouth: the Weser (*L2*), the Elbe (*M2*), the Oder (*O2*), the Vistula (*R2*), and the Danube (*L4*). In order to trace the lower course of the Danube, you will need to use the map on pages 274–275. As you trace each river, name the country in which it rises and the country where it reaches the sea.

Inland waterways. In studying the important rivers that rise in central Europe did you notice that they are all navigable? Turn to the map again, and you will see that many of their tributaries are also navigable and that the different river systems are connected by canals. This great network of inland waterways furnishes slow but inexpensive means of transportation.

In order to understand why transportation by river and canal is so important in central Europe, we must remember that this part of the continent was thickly populated long before railroads were dreamed of. In those early days the rivers were the chief routes of travel and transportation, and the inland towns that grew the fastest were those which had the best locations for trade by water. To make it possible for towns on different rivers to trade with one another, canals connecting the various river systems were built.

The map on pages 192–193 shows that today central Europe is covered with a network of railroads. Nevertheless, here, as in France, rivers and canals continue to be used for transporting large quantities of bulky goods, chiefly because transportation is cheaper by water than by rail. In fact, in recent years old canals have been deepened and new canals have been built.

Countries without seacoasts. When you were studying the map, you must have noticed that four of the countries of central Europe have no seacoast. What four countries are they?

For many years before the World War of 1914–1918 Switzerland was the only landlocked country of central Europe. Czechoslovakia, Austria, and Hungary were parts of the empire of Austria-Hungary, which extended southward to the eastern side of the Adriatic Sea. After the war, when Czechoslovakia, Austria, and Hungary became independent, the peace treaty provided ways in which these new landlocked countries could make use of free routes to the sea.

Internationalized rivers. In order to give the landlocked countries of central Europe means of shipping goods cheaply by water to the seaports of neighboring countries, the more important navigable rivers were *internationalized*. That means that they were declared open and free for the use of all nations on equal terms.

The Danube is internationalized all the way from Ulm, in southern Germany, to the Black Sea. This river has always been an important highway of transportation and trade, and it is a great help to Austria, Czecho-

slovakia, and Hungary to be able to use it freely. On the map on pages 274–275 trace the route by which ships may reach the Mediterranean Sea from the mouth of the Danube.

The Elbe and the Oder rivers are internationalized as far as they are navigable, giving Czechoslovakia free water routes to the North Sea and the Baltic Sea.

The Rhine, which you already know is a great highway of trade, is internationalized all the way from its mouth to Basel, in Switzerland, giving that little country a free navigable waterway to the port of Rotterdam. *See Figure 233.*

Figure 233. A view of the water front on the Rhine at Basel, in Switzerland. The long, low boats nearest you are barges for transporting freight. The steamer farther away is a passenger boat.

Something to prove. Prove that you are getting acquainted with central Europe by giving the names called for below:

1. The two largest countries of central Europe.
2. The four landlocked countries.
3. The two countries that have a large share of the Central Plains of Europe.
4. The two countries of central Europe which share the Alps.
5. The country in which the Bohemian Plateau is located.
6. The country which is almost wholly a plain.
7. The principal river of Poland.
8. The river that rises in the Black Forest and flows to the Black Sea.
9. The river that rises in Switzerland and flows to the North Sea.
10. The river that rises in the Bohemian Plateau and flows to the North Sea.
11. The river that rises in Switzerland and flows to the Mediterranean Sea.

A shipping test. Use the map on pages 188–189 to show how goods may be shipped by water between each pair of places named in the next column:

1. From Danzig (*R1*) to Warsaw (*S2*).
2. From Stettin (*O2*) to Breslau (*P3*).
3. From Hamburg (*M2*) to Berlin (*N2*).
4. From Hamburg (*M2*) to Prague (*O3*).
5. From Rotterdam (*J3*) to Basel (*K5*).
6. From Cologne (*K3*) to Vienna (*P4*) and Budapest (*R5*).

A map to make. 1. On an outline map of Europe trace the boundaries of the countries of central Europe with a colored pencil, and print their names neatly.

2. Add the names of the following rivers: the Rhine, Danube, Weser, Elbe, Oder, Vistula.

3. Find the capital cities of the central European countries on the map on pages 188–189. Show their locations by stars on your map and print their names.

4. Add red dots to show the locations of the seaports of Bremen, Hamburg, Stettin, and Danzig, and print their names.

Some things to prove. Prove by the map you have made that

1. All but one of the capital cities of central Europe are on navigable waterways.
2. The four leading seaports are at the mouths of navigable rivers.

By Ewing Galloway, N.Y.

Figure 234. Harvesting potatoes in Germany. Notice that the farmers are using a potato-digger. Where in the United States could you see sights like this?

Photograph by Ewing Galloway, N.Y.

Figure 235. A sugar-beet field in northern Germany. The beets have been dug from the ground and their tops cut off, ready to be sent to a sugar factory.

II. THE REPUBLIC OF GERMANY

Foreword. Germany ranks with Great Britain and France as one of the leading countries of Europe and of the world. Before the World War it was larger than France, but at the end of the war some of its territory was given to neighboring countries. Today it is somewhat smaller than France, but it has half again as many people. The government of Germany has also changed since the war. From 1871 until 1918 it was an empire; since 1918 it has been a republic. Another change which came to Germany as a result of the war was the loss of its colonies. These were chiefly lands in Africa, and they are now governed by Great Britain and France.

Like France, Germany is a great agricultural country, and like Great Britain it is a great industrial and commercial country. As you study this section find answers to the following questions:

1. Why has Germany become a great manufacturing country?
2. Why does it rival France in agriculture?
3. In what ways is the foreign trade of Germany like that of Great Britain?

1. The Northern Plain and the Bordering Uplands

If we should fly in an airplane over the northern plain of Germany, we should look down on a vast number of farms, many cities and towns, and a close network of railroads, rivers, and canals. Along the seacoast at the north we should see large seaports, and along the southern margin of the plain and in the neighboring uplands "forests" of smokestacks would tell us of busy industrial districts.

From the map on pages 188–189 tell what you expect to see on the farms of northern Germany. What reason does the map suggest for the industrial districts along the southern margin of the plain and in the neighboring uplands?

The Farm Lands of Northern Germany

Getting good crops from poor soils. Although the northern plain of Germany has rather poor glacial soils, the German farmers produce larger quantities of foodstuffs per acre than almost any other farmers in the world. The reason for this is that they use the best methods of work. They add plant

food to the soils by using large quantities of fertilizer; they sow the best of seed and tend the growing crops carefully; and they rotate their crops in such a way that the soil never becomes "worn out." You will remember from your study of the United States that crop rotation means planting different crops in each field from year to year.

Germany's wealth of potash. You will also remember that the principal raw materials used in manufacturing fertilizers are potash, nitrate, and phosphate. Germany has the richest deposits of potash salts in the world. Turn to the map on pages 188–189 and find the places where the potash is mined. These mines help to provide the German farmers with fertilizers at prices they can afford to pay, and they make Germany the leading producer and exporter of potash.

The leading crops. The leading crops of northern Germany are rye, oats, and potatoes, because they grow well in the sandy soils and the cool climate. Wheat is also raised, but in much smaller quantities, for most of the soils are too sandy to make good wheat lands. Oats are grown chiefly for live stock. Rye is the principal bread grain, and rye and potatoes are the chief food crops. Large quantities of potatoes also are grown for making alcohol and starch. *See Figure 234.*

On the map find the parts of the northern plain where the farmers raise large quantities of sugar beets. Germany is the world's greatest producer of sugar beets, and its sugar refineries turn out more beet sugar than those of any other country. *See Figure 235.*

Live stock and dairying. On the farms of the northern plain you will see large numbers of cattle, pigs, and poultry, and many sheep. Since the climate is too cool for corn, the farmers raise carrots, turnips, and other root crops to feed their live stock. They also feed potatoes to their pigs, and beet tops and beet pulp to their cattle.

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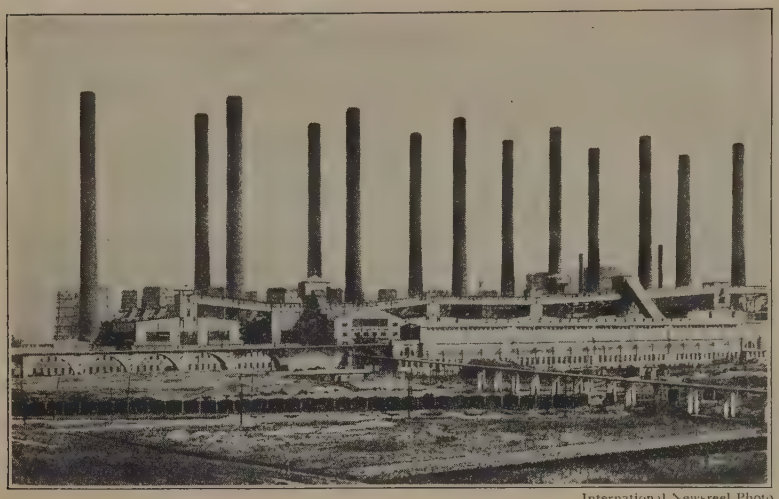
Figure 236. Dairy cows in a pasture in northwestern Germany. What reasons can you give for the fact that this part of Germany is well suited to dairying?

Near all the larger cities there are market gardens and dairy farms, but the principal dairying section is in the northwest. This portion of the German plain is part of the great dairying region of northwestern Europe which extends from western France to southern Sweden. *See Figure 236.*

Small farms and many workers. Because Germany is so densely populated, most of the farms are small, and the need for food leads the farmers to make every acre of land produce all it possibly can. Farm workers are plentiful, for the women and children work side by side with the men in the fields. This is true in all the central European countries.

The growth of cities in the plain. The German plain has a number of cities with more than 100,000 people, and many smaller cities and towns. Most of the cities began as trading centers for the surrounding farm lands. Today they are also manufacturing centers, and in many of them you will find flour mills, sugar refineries, factories for making starch and alcohol from potatoes, and plants for the manufacture of farming tools and machinery. Those that have become railroad centers have many different industries.



International Newsreel Photo

Figure 237. A plant in northern Germany where steam-electric power is made by burning lignite briquets. The plant is near one of the lignite-mining districts, where the fuel can be obtained cheaply.

East Prussia. On the map on pages 188–189 find East Prussia (*S–T1*). Notice that this part of Germany is separated from the rest of the country by a strip of land belonging to Poland and the Free City of Danzig. In general the farms of East Prussia are much larger than those farther west in Germany, and the rich landowners hire the poorer people to work for them.

Rye, oats, and potatoes are the chief crops of East Prussia, and much land is used for pasturing cattle and sheep. The farmers raise flax also, and in several of the towns there are mills for the manufacture of linen goods.

Some things to explain. Give an explanation for each fact stated below:

1. The farmers of the northern plain of Germany do not raise corn. (Remember what kind of weather corn needs while it is growing.)
2. Rye, rather than wheat, is the chief bread grain grown in northern Germany.
3. In spite of rather poor soils the German farmers raise large quantities of foodstuffs per acre.
4. Flour-milling and the manufacture of sugar, starch, and alcohol are important in northern Germany.

Three Great Industrial Districts

Germany's wealth of coal. On the map on pages 188–189 find the coal fields of Germany. The westernmost one is the richest coal field in Europe, and Germany mines more coal than any other country except the United States. Like Great Britain, Germany has a surplus of coal for export, and its industrial growth has been due in large measure to its wealth of this fuel.

How the Germans use lignite. Besides bituminous coal, Germany has large beds of lignite. This, as you may remember, is brown coal, much softer and poorer in quality than bituminous coal. Most nations make very little use of lignite, but the German scientists have found ways to press it into lumps called briquets, which provide good fuel for making steam power. Much of the steam power used in Germany in the mining and preparation of potash and in the refining of beet sugar is made by burning briquets. What reason for this can you discover from the map?

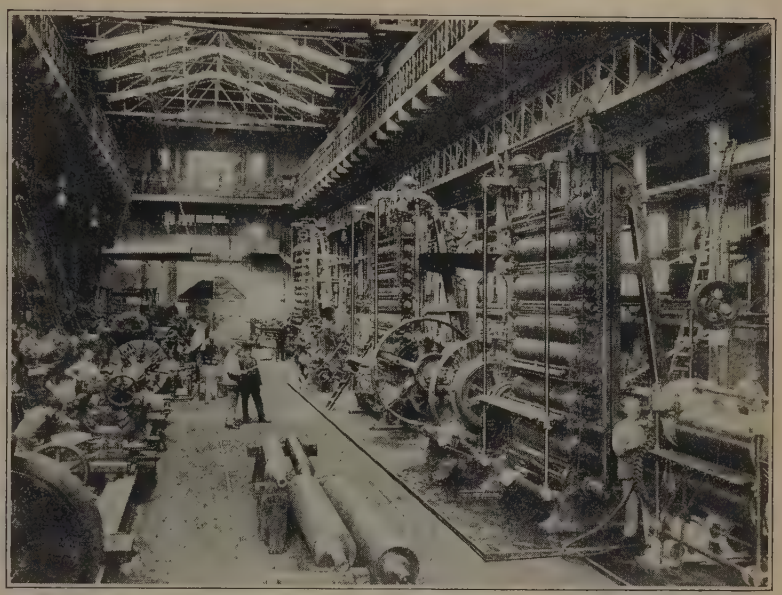
Large quantities of German lignite are used to make steam power for the manufacture of chemicals and for the making of electricity. In fact, about half of all the electricity used for power in Germany is steam-electric power made with the use of lignite briquets instead of coal. *See Figure 237.*

Coal fields and industrial districts. Germany has many manufacturing centers, but its three greatest industrial districts are located on and near the three great coal fields. As you read about each one, locate it on the map on pages 188–189.

The Ruhr district. The best coking coal in Germany comes from the rich coal field in the valley of the Ruhr River, a small tribu-

Courtesy of German Tourist Information Office, N.Y.

Figure 238. Some of the blast furnaces which furnish pig iron for the Krupp iron-and-steel works at Essen.



From Ewing Galloway, N.Y.

Figure 239. A view in one of the Krupp plants. In this plant rolling machinery such as is used in paper mills is manufactured. The Krupp works alone provide work for many thousands of people.

tary to the Rhine. Because of this, the Ruhr Valley, with the neighboring upland, is the great German center for the manufacture of iron and steel.

Farther south in the upland, iron ore is mined, but not nearly enough for all the blast furnaces of the Ruhr district. Large quantities of iron ore come in barges down the Rhine from Lorraine, in France, and additional supplies, imported from Sweden and Spain, come up the Rhine from Rotterdam.

The river ports for this great industrial district are Duisburg and Düsseldorf, on the Rhine. Find them on the map on pages 188–189 (*K3*). For more than 30 miles eastward from these Rhine ports the valley of the Ruhr is crowded with industrial cities and towns. In one section there are 7 miles of almost continuous blast furnaces and iron works, and throughout the entire district there are many steel mills and plants for the manufacture of products of iron and steel. These products vary from all kinds of hardware and cutlery to locomotives, heavy machinery, steel rails, and huge steel plates to be used in building ships.

The largest city of the Ruhr district is Essen, where the huge Krupp iron-and-steel plants are located. Nearly all branches of the iron-and-steel industry are carried on in this city. *See Figures 238 and 239.*

Industrial centers in the Rhine Valley. The abundance of coal in the valley of the Ruhr has led to the growth of many manufacturing centers in the neighboring part of the valley of the Rhine. Many different kinds of manufacturing are carried on, but the textile industries are the most important.

Linen goods are manufactured from flax grown in Germany and Belgium, and large quantities of cotton, woolen, and silk goods are made from raw materials imported through Rotterdam and Antwerp. Crefeld, west of the Rhine, is the leading silk-manufacturing city of Germany. Many kinds of chemicals also are manufactured in this part of the Rhine Valley, and among them dyes for coloring yarn and cloth are very important.

Figure 240. An airplane view of Cologne, showing the cathedral, which is one of the most beautiful churches in Europe. At the right you can see the central railroad station, and in the foreground part of the water front on the Rhine. Besides being a great railroad center, Cologne is one of the leading river ports of Germany.

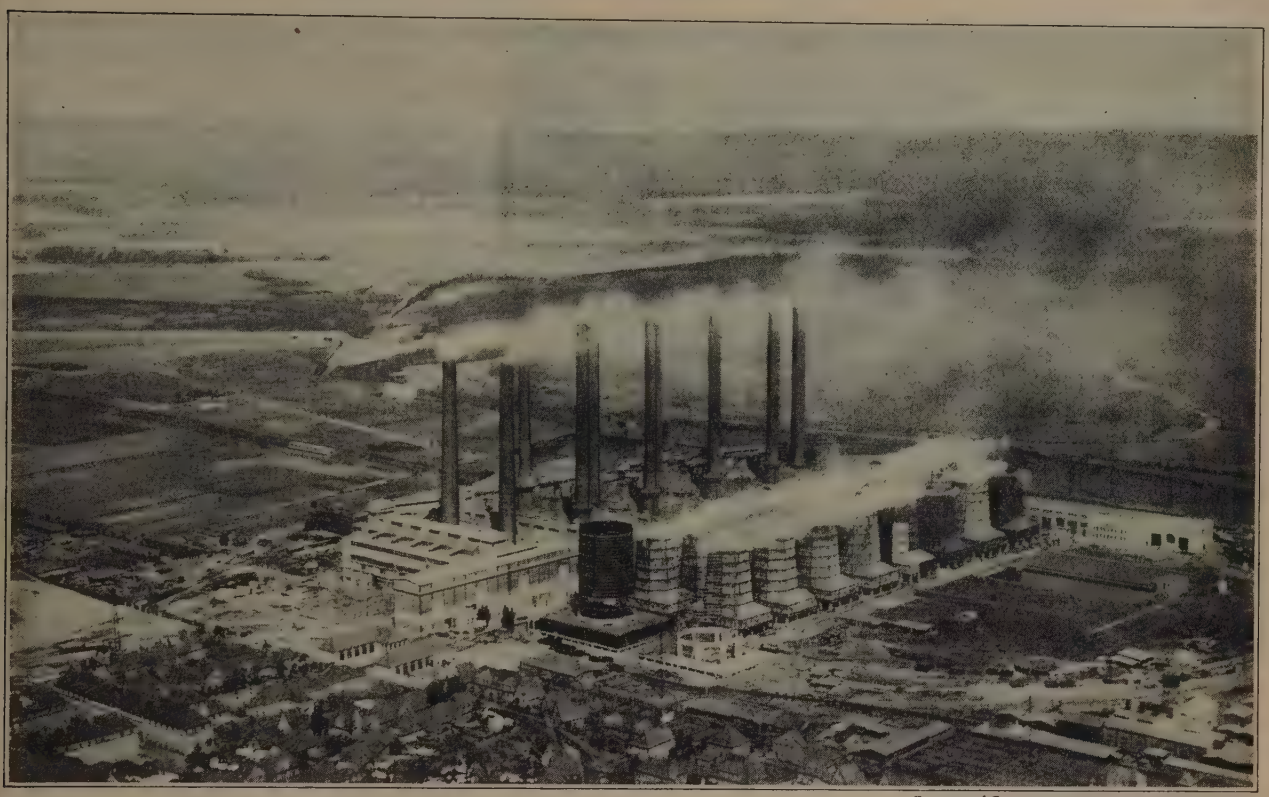
The largest city of the Rhine Valley. Among the industrial cities of the Rhine Valley is Cologne, the third largest city of Germany. Find Cologne on the map on pages 188–189 (*K3*), and notice its location near the place where the Rhine leaves the upland region and enters the plain.

The valley of the Rhine is the principal railroad route through the upland region, and Cologne is the place where railroads from the east, north, and west meet to pass southward. This makes Cologne a great railroad center. It is also a busy river port; and since it is a meeting place for routes of transportation by river and rail, it has become a great business and industrial center. *See Figure 240.*

The Silesian industrial district. On the map on pages 188–189 find the southeastern "tongue" of Germany, between Czechoslovakia and Poland. Here, and in the neighboring part of Poland, there are extensive coal fields and mines where iron ore, lead, and zinc are taken from the earth. Before the World War all this territory belonged to Germany, and because of its coal and metal ores it had become a very important mining and manufacturing district. Two thirds of the coal fields are now in Poland, as well as many of the iron, lead, and zinc mines.

In both parts of the Silesian district, — the German part and the Polish, — there are blast furnaces, steel mills, and factories for the manufacture of machinery and of many kinds of metal goods. Textile industries also are important, especially the manufacture of woolen goods. *See Figure 241.*

On the Oder River, almost in the center of German Silesia, is Breslau, the largest city of southeastern Germany. Because of its location it is an important commercial center



Courtesy of German Tourist Information Office, N.Y.

Figure 241. A plant in German Silesia, where steam-electricity is made by burning coal from neighboring mines and is distributed over wires to various industrial cities and towns. Plants of this kind in Germany also manufacture other valuable products such as tar, fuel gas, and illuminating, or lighting, gas from coal.

and a busy manufacturing city. Coal is obtained easily from the neighboring coal fields, and raw materials come to the city both by rail and by river.

The Saxony industrial district. The third great industrial district of Germany is in the state of Saxony, north of the western end of Czechoslovakia. It has many manufacturing cities and towns, and like the Ruhr district and Silesia it owes its industrial growth largely to its coal fields.

Among the many different manufactures, textiles hold the leading place, and cotton-manufacturing is especially important. The raw cotton, imported chiefly from the United States, comes by rail from the port of Bremen. Chemnitz is the center of the cotton-manufacturing industry but many of the other cities also have cotton mills.

Leipzig and Dresden. The largest cities of Saxony are Leipzig and Dresden. Find them on the map on pages 188–189 (*N3*). Which one is on the Elbe River? The map on pages 192–193 will show you that both of these cities are railroad centers.

Coal is mined near Dresden, and the city is an important manufacturing center, especially for machinery. Dresden china, the best-known product of Saxony, is not made in Dresden, but in a neighboring town. Explain why Dresden is well located for bringing together raw materials and marketing manufactured goods. Then study Figure 242.

Leipzig ranks fifth in population among the cities of Germany. Its central location near the southern margin of the plain makes it a gateway city between that region and the southern uplands, and it is one of the great

Figure 242. An airplane view of part of Dresden, on the Elbe River. The large building nearest you at the left is the Opera House, and the building at the right of it is a famous museum which contains many beautiful paintings, sculptures, and other works of art. Dresden is one of the great centers of art and culture in Germany.

commercial centers of Europe. Twice each year a great fair is held at Leipzig, and merchants from all over Europe come to this city to display and sell their goods. Leipzig is also the greatest fur market in Europe.

German leadership in making chemicals. In each of the great industrial districts and in many other places in Germany there are factories for making dyes, drugs, medicines, acids, and other chemical products. The Germans are famous for their skill in this kind of work, and they have long been leaders in the chemical industries.

One of the leading chemical industries is the manufacture of dyes from coal tar, which is a product left over in the making of coke from coal. The coal-tar dyes are made in thousands of tints and shades and are exported in large quantities. Other kinds of work closely connected with the chemical industries are the making of nitrate from nitrogen extracted from the air by electricity, and the manufacture of fertilizers.

A coal test. You have learned that Germany's industrial growth is due largely to its wealth of coal. Prove that you understand this statement by completing the sentences below:

1. The three leading coal fields of Germany are in the valley of the _____ River, in _____, and in the state of _____.
2. These fields provide large quantities of _____ suitable for use as fuel for making _____ power and _____ power for manufacturing.
3. In the Ruhr district Germany has large supplies of coal suitable for making _____ for smelting _____.
4. The plants which make coke from coal also furnish _____ for use in making _____.
5. In addition to its bituminous coal, Germany has large quantities of _____ which is used for _____.

2. The Valley of the Middle Rhine and the Bavarian Uplands

On the map on pages 188–189 find Cologne (*K3*) again. Trace the Rhine upstream from Cologne to Mainz (*L4*). Through what kind of land does the Rhine flow in this part of its course?

If you should take a boat trip up the Rhine from Cologne, you would first pass through the part of the Rhine Valley which is so narrow and steep-walled that it is called the Rhine Gorge. Figure 243 shows the kind of sights you would see there.

On reaching Mainz you would enter the broad valley of the middle Rhine, where the river flows through a fertile lowland some 15 to 20 miles wide. South of Karlsruhe the part of this valley west of the river is in France. What kind of work do you think you might find the people of this valley lowland doing?

East of the valley lowland are the uplands of Bavaria, so called because Bavaria is the name of the largest state in this part of Germany. Judging from the map, what kind of work do you think is important in this region?

The valley of the middle Rhine. This lowland region is sheltered from cold winds by the bordering uplands and mountains, and therefore spring comes early and the growing season is long. The rich soils and the climate combine to make it one of the best farming regions of Germany.

The sunny hillsides bordering the lowland are covered with vineyards and fruit trees, and the people make wines as famous as those of France. On the lower lands of the valley grain, sugar beets, tobacco, and hops are raised, and many of the farmers keep beef cattle, dairy cows, and pigs.

Photograph by Publishers Photo Service, Inc.

Figure 243. A view in the Rhine Gorge. In many places the steep slopes are covered with vineyards, and on some of the hilltops there are castles which were built hundreds of years ago.

In the cities and towns of the plain there are creameries, sugar factories, cigar factories, and breweries where barley and hops are used to make beer. Beer is the national drink of the Germans, just as light wines are the national drink of the French.

The largest city of the middle Rhine plain is Frankfurt on Main. Find this city on the map on pages 188–189 (*L3*) and notice its location near the junction of the river Main with the Rhine. Frankfurt is one of the important river ports of Germany, and has large chemical works, breweries, and machine shops. What reason can you discover from the map for its importance as a river port?

The Black Forest. This mountain region lies across the Rhine Valley from the Vosges Mountains of France; and as its name suggests, it has valuable forests. The trees are pines and other softwoods, and lumbering is of considerable importance. The abundance of wood has made this region a center for the manufacture of many small wooden articles, such as toys, wooden clocks, and musical instruments. Much of this work is carried on in the homes of the people. *See Figure 244.*

In the valleys of the Black Forest much land has been cleared for farming. The people raise rye, barley, and potatoes and keep cattle, many of which are driven to pastures on the higher mountain slopes to graze in the summer.

In this region, as in the Vosges, there is abundant water power, and this has helped the growth of manufacturing. Among the industries the manufacture of paper and the making of shoes are important. Can you suggest any reasons for this?

Farming in the Bavarian uplands. The Bavarian uplands, with their wooded hills and fertile valleys, are quite different in appearance from the northern plain of Germany. Although their surface is rougher, their soils are better, and the lower parts of the region provide rich farm lands. The greater part of Germany's wheat is grown here, as well as large quantities of rye, oats, and barley. Tobacco and hops are money crops on many of the farms, and vineyards cover the sheltered hillsides along the tributaries to the Rhine. *See Figure 245.*

Courtesy of German Tourist Information Office, N.Y.

Figure 244. A clock-maker in the Black Forest. Have you ever seen clocks like this from Germany?

By Ewing Galloway, N.Y.

Figure 245. Threshing wheat in a farmyard in Bavaria. Notice that the women of the family are helping the men with the threshing. Notice also how neat and well-kept the house and the barn look.

The farmers of this region keep cattle, pigs, and sheep, but cattle are by far the most important. At the south, where the uplands meet the lower slopes of the Alps, there is a rich dairying section.

Advantages for manufacturing. The Bavarian uplands have no coal or metal ores, but, nevertheless, manufacturing is important in all the larger cities and towns. That is partly because the region is densely populated and produces certain valuable raw materials, and partly because of the railroads and waterways which connect it with other parts of Germany and with neighboring countries. Use the map on pages 188–189 to show how coal may be brought to the Bavarian uplands from western Germany by water.

Some important industries. The northeastern part of the uplands has valuable deposits of clay and sand which have led to the manufacture of porcelain and glass. This is the leading glass-manufacturing district of Germany. Glass-making has led, in turn, to the manufacture of fine lenses and all kinds of optical instruments.

In the same part of the uplands toy-making is an important industry. This work began long ago, when all the toys were made by hand from wood obtained from the forests of the region. Today there are many factories where toys of metal as well as of wood are made. Thousands of the toys that fill our shops at Christmas time come from this part of Germany.

The center of the toy-making is the city of Nürnberg, on the canal which connects the river Main, a tributary of the Rhine, with the Danube. Besides its toy factories, Nürnberg has glass works, machine shops, and many factories where optical instruments and fine metal goods are made. The manufacture of jewelry and other metal goods which require much skill is important in several other cities of the region.

Because hops and barley are important crops of Bavaria, this region has many breweries. Among the industries which depend on imported raw materials, cotton-manufacturing is especially important. The center of this industry is the large city of Stuttgart.

Munich. On the map on pages 188–189 find Munich, or München, as the Germans call it (*M4*). In what part of the Bavarian uplands is it located? Munich is the fourth largest city of Germany, and the great railroad and commercial center of the southern part of the country. To the people of other countries, however, it is best known, not for its business and industry but for its wonderful art collections.

In order to understand the growth of Munich, find the Brenner Pass through the Alps on the map on pages 188–189 (*M5*). Notice that Munich is directly north of it. Through this pass runs the main railroad line from Berlin to Rome, the capital of Italy.

Find the railroad from Berlin (*H5*) to Rome (*H7*) on the map on pages 192–193. Find, also, the main east-west railroad which connects Paris (*F6*) with Vienna (*J6*). Notice that these two railroad lines cross at Munich. Notice also that other railroads meet the one from Berlin at Munich to cross the Alps by way of the Brenner Pass. You can see now that the location of Munich has made it a great railroad center, and from what you know of other railroad centers you should be able to explain why it has become the largest city of southern Germany and one of the great cities of Europe. *See Figure 246.*

By Ewing Galloway, N.Y.

Figure 246. A crowded street corner in the shopping district of Munich. The large building in the picture is the leading department store of the city. Besides being a great business center, Munich is a manufacturing city. Can you explain why?

Some lists to make. Below is a list of some of the important products manufactured in the regions of southern Germany which you have just been studying. Divide them into two lists: (1) those made with the use of raw materials produced in that part of Germany, and (2) those made with the use of raw materials from outside.

wooden toys	cotton goods	porcelain
glass	metal toys	machinery
jewelry	butter	cigars

3. Berlin and the German Seaports

The two largest cities of Germany are Berlin, the capital, and Hamburg, the leading seaport. Find these two cities on the map on pages 188–189 (*N2, M2*). In what region is Berlin located? Between what two important rivers? On which of these rivers is Hamburg located? Find the other two important German seaports. On what rivers are they located?

A modern city. American travelers in Europe are often surprised to find that Berlin looks very new compared with London and Paris. They miss the narrow, crooked streets and the quaint old buildings of those cities, for Berlin is more like the cities at home.

Berlin is not a young city, for the first settlement was made several hundred years before the discovery of America. But it grew more slowly than London or Paris, and it did not become a really great city until after it was made the capital of Germany, in 1871. The reason it looks so modern is that many of its public and private buildings have been erected in the last fifty years. Before you read further, study Figure 247.

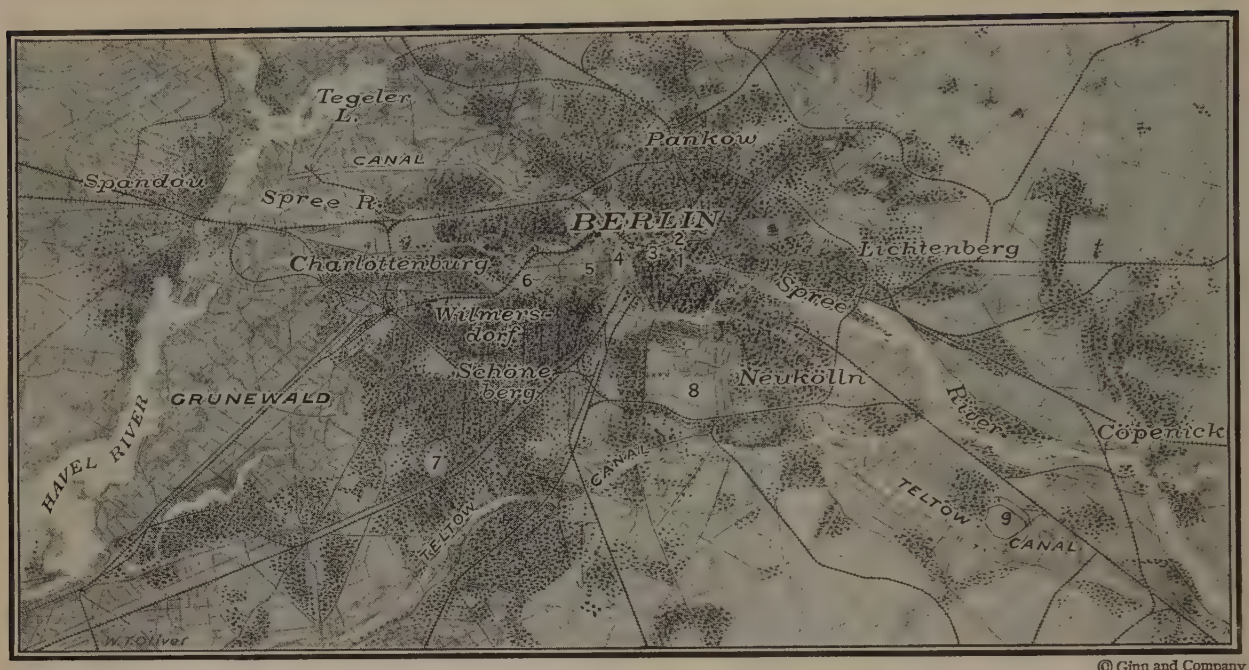


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Figure 247. A relief map of Berlin and its surroundings. The numbers show the locations of the following places of interest: 1, the former royal palace, now a museum; 2, the National Gallery, containing paintings and sculpture; 3, the University of Berlin; 4, Unter den Linden (a boulevard); 5, the Tiergarten (a beautiful wooded park); 6, Zoölogical Garden; 7, Botanical Garden; 8 and 9, landing fields for airplanes.

Today Berlin has over four million people and is the third largest city in the world. Although it has more people than Paris, it seems much less crowded; for it covers about ten times as much area. Many people find Berlin less interesting than London and less beautiful than Paris, but everyone admires its magnificent buildings, its broad, smoothly paved streets, and its parks, gardens, and well-kept homes. *See Figure 248.*

The center of the city is a little island in the river Spree. On this island are the former emperor's palace and several other public buildings. The palace has been turned into a museum since Germany became a republic. Leading westward through the city from the island is the famous avenue known as "Unter den Linden." It is bordered by trees and grassplots and is divided into two broad highways which provide ample space for the automobiles that speed along it from early morning till late at night. *See Figure 249.*

The location of Berlin. The map shows that Berlin is located about halfway between the Baltic Sea and the upland of Saxony, and also about halfway between the Elbe and Oder rivers. Canals connect the Spree with the Elbe and the Oder, giving Berlin transportation by water to the ports of Hamburg and Stettin.

Although Berlin benefits by its waterways, it owes its growth much more largely to its railroads. The map on pages 192–193 will show you that it is the hub of Germany's railroad system and that it is one of the great railroad centers of Europe. Figure 173 (p. 176) shows that it is also the hub of a system of airplane routes which connect it with all the larger cities of the continent.

A great manufacturing center. With its large population, its nearness to the seaports, and its railroad connections with all parts of Europe, it is natural that Berlin should have become a great manufacturing center. It

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Figure 248. One of the broad, smoothly paved streets in the heart of the business section of Berlin.

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Figure 249. Looking down Unter den Linden toward the Brandenburg Gate in Berlin. The Brandenburg Gate leads into the Tiergarten, the largest of the many beautiful parks in Berlin.

turns out a great variety of products, and many thousands of people find work in its mills and factories. Among its more important manufacturing plants are factories for making many kinds of machinery, textile mills, clothing factories, shoe factories, paper mills, chemical plants, and glassworks.

The location of the German seaports. You already know that Germany controls the mouths of three of the navigable rivers of central Europe. At the heads of the estuaries of these rivers stand the leading German seaports: Hamburg on the Elbe, Bremen on the Weser, and Stettin on the Oder. Turn to the map on pages 188–189 and study their locations (*L–M2* and *O2*).

Vast quantities of goods move to and from these seaports in barges on the rivers, and each port is well supplied with railroads. In a general way each port serves its own river basin; but of the three, Hamburg attracts by far the greatest amount of foreign trade, and is one of the very great seaports of the world. *See Figure 250.*

Why Hamburg leads. Bremen is somewhat handicapped by the fact that the Weser does not flow through any great industrial district. A canal connects the Weser with the Ruhr district, but that does not greatly increase Bremen's trade, because the Rhine is the natural river outlet for the Ruhr.

Stettin has the advantage of being the nearest seaport to Berlin and the natural gateway for the Silesian industrial district of Germany and Poland. It suffers somewhat, however, from its location on the Baltic Sea. The Kiel Canal greatly shortens the distance between the Baltic and North seas; but even so, ships from distant lands take from one to two days longer to reach Stettin than to reach Hamburg or Bremen.

The map will show you the advantages which Hamburg has over Bremen and Stettin. Because of its location at the mouth of the Elbe this port is the ocean gateway for the trade of two great industrial districts: Saxony in Germany, and the Bohemian Plateau of Czechoslovakia. Furthermore, the Elbe is

By Ewing Galloway, N. Y.

Figure 250. Part of the harbor of Hamburg. At this great German port you will see all kinds of boats: river barges and steamers, coastal steamers, and ocean freighters and liners. The large ship in the picture is a passenger liner which runs between Hamburg and ports on the east coast of South America.

connected by canals with Berlin and the Oder River. Because of this and the fact that Hamburg is a North Sea port, it handles much of the foreign trade of the German capital and some of the foreign trade of German Silesia.

Harbor sights. At each of the German ports there are miles of wharves and docks along both sides of the river, and large ocean ships are continually coming and going, bringing in cargoes from distant lands and carrying away huge quantities of German products. Many of the ships are from the United States, for the Germans buy more from us than from any other country, and we, in turn, are excellent customers for German goods.

The Germans own and operate a number of large passenger-steamship lines, and both Hamburg and Bremen are ports for transatlantic liners.

Manufacturing at the seaports. Like all great seaports, Hamburg, Bremen, and Stettin are great manufacturing centers also. Germany's shipbuilding industry, which is very large, is centered in these ports, and there are many plants for making machinery, ships' engines, and chemicals. Imports of raw materials from distant lands have led to the growth of textile industries, such as cotton-manufacturing at Bremen, jute-manufacturing at Hamburg, and woolen-manufacturing at Stettin.

German trade. You have now learned enough about Germany to know that it is first of all a great manufacturing country. What, then, do you expect its chief exports and imports to be? Check your answer by the map on pages 188–189.

After studying the map, you will not be surprised to learn that about three fourths

of all Germany's exports are manufactured goods, and that nearly half its imports are raw materials. This will remind you of the trade of Great Britain. Like that country, Germany seeks raw materials for its industries and markets for its manufactured goods in all parts of the world. Germany buys foodstuffs also from other countries but not such large quantities as Great Britain does. Explain why.

It is often said that Germany is surrounded by a ring of markets. That will suggest to you the fact that Germany's neighbors in Europe are among its best customers for manufactured goods. Among them Great Britain, the Netherlands, Czechoslovakia, and Switzerland buy the largest quantities of German exports. They play a much smaller part in Germany's import trade, for they are not large producers of the raw materials that Germany needs most. Our own country leads in supplying Germany's imports, and is followed by Argentina.

A check. Turn back to page 238 and read over the questions at the end of the first column. You should be able to answer them now.

1. In answering the first question, tell (1) what important raw materials for certain of their industries the Germans produce in their own country; (2) what advantages the Germans have for getting raw materials from other countries, both near and far; (3) what mineral resources they have which provide power for the mills and factories; (4) why they have no trouble in getting factory workers; (5) what advantages they have for marketing manufactured goods at home and in other countries.

2. In answering the second question, tell (1) what advantages of surface and climate Germany offers for agriculture; (2) how the German farmers manage to get such large crops from their land.

3. In answering the third question, name (1) the two classes of goods which the Germans import in largest quantities; (2) the class of goods which they export in largest quantities.

A list to make. Write down the names of the cities described below. When you have finished, you will have a list of the eight largest cities of Germany.

1. The capital of Germany.
2. The leading seaport of Germany.
3. The great river port and railroad center on the Rhine.
4. The important railroad center in Bavaria.
5. The commercial city in Saxony where a great fair is held twice a year.
6. The city in Saxony which has given its name to a famous kind of German china.
7. The leading city of German Silesia.
8. The largest of the iron-and-steel manufacturing cities in the Ruhr Valley.

Giving reasons. Complete each sentence below by giving reasons for the fact which it states.

1. Farming is a very important kind of work in the northern plain of Germany because _____.
2. German farmers are able to buy fertilizers at reasonable prices because _____.
3. The leading industrial districts of Germany are in the uplands bordering the northern plain because _____.
4. Lignite plays a much greater part in manufacturing in Germany than in any other country because _____.
5. Toy-making is an important kind of work in Bavaria because _____.
6. Berlin is a great manufacturing center because _____.
7. Hamburg is the leading seaport of Germany because _____.
8. Shipbuilding and textile-manufacturing are important at the German seaports because _____.
9. Part of the foreign trade of Germany is carried on through the Dutch port of Rotterdam because _____.

Special credit work. See how many things you can find at home marked in such a way that you know they were made in Germany. Perhaps you can interest a group of your classmates in getting together a collection of German-made articles for a classroom exhibit.

From Ewing Galloway, N.Y.

Figure 251. Unloading sugar beets at a sugar factory in Poland. Poland, like Germany, has many factories where sugar is made from sugar beets from the farms.

From Ewing Galloway, N.Y.

Figure 252. Cattle in a farmyard in Poland. Why are the crops and live stock raised in northern Poland like those raised in the northern plain of Germany?

III. POLAND AND CZECHOSLOVAKIA

Foreword. Poland and Czechoslovakia are two of the "new" European countries which became independent at the end of the World War. For many years before the war Czechoslovakia had been part of Austria-Hungary, and Poland had been divided between Germany, Austria-Hungary, and Russia. Both countries are now independent republics.

Find Poland and Czechoslovakia on the map on pages 188–189. How do they compare in size? Which one has more land suitable for farming? Which one appears to have more mineral wealth?

Although Poland is nearly three times as large as Czechoslovakia and has about twice as many people, its foreign trade amounts to little more than half that of Czechoslovakia. Judging from this, which country do you think is making fuller use of its resources?

A note about names. As you continue your study of the countries of central Europe and then go on to study the countries of southern Europe, you will find many cities referred to by two names, as, for example, Prague (Praha). In every case the first name is the one we commonly use, while the second, in parenthesis, is the name used by the people of the country themselves. It is well to know the national names as well as the names we commonly use; for the national names sometimes appear in our newspapers, and they should always be used in directing letters to foreign countries.

Poland — Germany's Neighbor on the East

Farming in Poland. If you travel east from Berlin to Warsaw, you will find that rye, oats, potatoes, and sugar beets are the leading crops on the Polish plain, just as they are on the German plain, and that the Polish farmers keep cattle, pigs, and poultry, just as the German farmers do. *See Figures 251 and 252.*

You will find fewer small farms in Poland than in Germany, for more of the land is in large estates belonging to rich landowners who hire the Polish peasants to work for them. This is unfortunate; for the owners leave much of the land uncultivated, and hired farm-workers take less interest in getting the best from the soil than small-farm owners do.

If you travel all the way across Poland, you will find the farms in the eastern part less prosperous than those in the west. That is because before the World War the Germans

Photograph from Ewing Galloway, N.Y.

Figure 253. A view at one of the steel plants in Polish Silesia. The liquid pouring from the troughs into the vats on the flat cars is white-hot steel.

owned the western part, and they had introduced their careful methods of farming. The Russians, who owned the eastern part, had done little to improve farming methods there.

In Poland, as in Germany, the southern uplands are important farm lands. Most of Poland's wheat lands are in this part of the country because the soils are richer than on the northern plain. Large quantities of flax also are raised in this region, both for the fiber and for the seed. From the western part of the plain and from the southern uplands live pigs and poultry and various other farm products are exported across the boundaries of Poland to Germany and Czechoslovakia.

More than half of all the workers of Poland are farmers, and farming is more important than any other kind of work. In spite of this, Poland is a less important farming country than Germany, where so many people are engaged in manufacturing. The Poles realize that to be as successful as the Germans in agriculture they must break up the great estates into small farms, make more of the peasants farm-owners, and adopt better farming methods. This work has already begun, and it promises to increase Poland's prosperity greatly.

Poland's forests. In the northeast and in the southern uplands Poland has valuable forests which provide most of the wood used in the country and furnish much lumber and pulp wood for export. These forest products find excellent markets farther west in Europe, especially in Great Britain and Germany. Explain why.

Mineral wealth. As you know, Poland shares with Germany the rich Silesian district, with its coal, iron ore, zinc, and lead. So many of the Silesian mines are now in Poland that this country stands high among the European countries in the production of zinc, lead, and coal. Furthermore, in Silesia Poland now has many blast furnaces, steel mills, and zinc smelters which were formerly in Germany. *See Figure 253.*

Another source of mineral wealth in Poland is the petroleum which is found in the Carpathian region. Near the oil fields there are many refineries, and about half their output of mineral oils is exported. *See Figure 254.*

Figure 254. A power plant at one of the oil fields in Poland. In this plant steam-electricity made by burning fuel oil is used to provide power for pumping oil from the wells.

Photograph by Ewing Galloway, N. Y.

Figure 255. Harvesting grain in the Bohemian Plateau of Czechoslovakia. The men are using machines which mow the grain and leave it lying on the ground. Other workers gather up the grain, tie it in bundles, and stack the bundles in shocks to dry in the sun. Notice the broad stretch of cultivated fields in the distance.

In the same part of the country there are valuable deposits of rock salt which have been mined for hundreds of years. Potash salts have also been discovered here, and are being mined in greater quantities each year.

Work in the cities of Poland. On the map on pages 188–189 find Warsaw (Warszawa), the capital and largest city of Poland (*S2*). Notice its central location on the Vistula River. The map on pages 192–193 will show you that Warsaw is also the center of Poland's railroad system. Because of its railroads and its outlet to the sea by way of the Vistula, Warsaw is an important commercial and industrial city. Among its manufactures machinery, leather, and textiles are important.

Turn to the map on pages 188–189 again and find Lodz (*R3*), Lemberg (Lwow) (*U4*), and Krakow (*S4*). These cities are all important manufacturing centers. Lodz is Poland's leading cotton-manufacturing city. Krakow uses iron and steel from the Silesian district for the manufacture of machinery. Lemberg, in the southeast, has many small industries, among which the making of linen goods from flax that is grown close by is very important.

Poland's trade. The map shows that Poland is almost cut off from the sea by East Prussia and the area belonging to the Free City of Danzig. Since Danzig, at the mouth of the Vistula, is the natural ocean gateway for Poland, most of Poland's foreign trade by water has long passed through that port. But now that the Poles are independent, they want a port within their own boundaries, and they are developing Gdynia, just north of Danzig, for that purpose.

From the map (pp. 188–189) tell what kinds of work furnish the leading exports of Poland. What imports show that textile-manufacturing is important in Poland? that Poland's iron-and-steel industries do not fully supply the needs of the people?

The greater part of Poland's trade is with other countries of Europe, especially with Germany. For this reason much of its foreign trade is carried on by means of the railroads and the inland waterways.

The Country of the Czechs and Slovaks

Czechoslovakia. In studying the map you must have noticed what a strangely shaped country Czechoslovakia is. The western part of the country is the land of the Czechs, and the eastern part is the land of the Slovaks. After the World War these two groups of people united to form a single nation, and they called their country Czechoslovakia.

This union brought together under one government the Bohemian Plateau, the Moravian corridor, and the mountainous region of Slovakia. Find these three parts of Czechoslovakia on the map on pages 188–189. The Moravian corridor is the strip of upland in the central part of the country.

Farming in the Bohemian Plateau. The map shows that the Bohemian Plateau is an upland surrounded by a ring of old, worn-down mountains. The streams that rise on the inner slopes of the mountains flow toward the center of the plateau, where they join to form the Elbe River. The broad valleys of the streams have rich soils which make the plateau an important farming region. The farmers raise excellent crops of rye, oats, barley, wheat, potatoes, and sugar beets, and keep many cattle and pigs. *See Figure 255.*

A great industrial region. About two fifths of all the workers in the Bohemian Plateau are engaged in manufacturing, for this region is one of the busiest industrial districts of central Europe. What reasons for this can you discover from the map?

The abundance of coal in the plateau has led to the development of many kinds of manufacturing. Most important of all are the textile industries, for which large quantities of cotton, wool, silk, and flax are imported. Large quantities of hides and skins also are imported, and the making of shoes and gloves is very important.

Photograph from Ewing Galloway, N.Y.

Figure 256. In a Czechoslovakian glass factory. The women are working at a machine which shapes glass cups. Notice the drinking glasses on the table.

The iron ore mined near the coal fields has helped the growth of iron-and-steel industries, and additional supplies of iron and steel are purchased from other countries for use in the factories which manufacture machinery and other products of these metals.

Many raw materials produced in the plateau itself and the neighboring mountains also help to make this region a great industrial district. The forest-covered mountains supply pulp wood for the manufacture of wood pulp and paper, and the farms supply large quantities of sugar beets for making sugar.

Valuable deposits of clay provide the raw material for making porcelain ware, and beds of sandstone provide sand for the manufacture of glass. Bohemian glassware is famous for its beauty of color and design, and finds markets in many parts of the world. Perhaps you have seen some of it, for it is sold in many of our stores. *See Figure 256.*

The Moravian corridor. The narrow belt of land known as the Moravian corridor is a small but important part of Czechoslovakia. Like Bohemia, it is an agricultural and industrial region because it has fertile farm lands and good coal fields.

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Figure 257. A view of Prague. In this picture you are looking across the river toward the fine old palace, built long ago when Bohemia was an independent kingdom, and now used for the government offices. Towering above the walls of the palace is the cathedral, the most beautiful church in Czechoslovakia.

The coal at the northern end of the corridor has led to the growth of an important iron-and-steel industry. The coal mined in the south has helped to make Brünn (Brno) a busy manufacturing city, with textile mills and factories for making machinery, leather goods, porcelain, and glass. Find Brünn on the map on pages 188–189 (*P4*). It is the second largest city of Czechoslovakia.

Slovakia. East of the Moravian corridor is Slovakia, the part of Czechoslovakia which lies mostly in the Carpathian Mountains. In many ways this is a rich region, but it is not nearly so well developed as the rest of the country. That is partly because it is so mountainous and partly because the Slovaks are mostly simple peasants. The Czechs are well educated and skilled in many kinds of work, and they have made much greater use of their resources than have the Slovaks.

The mountains of Slovakia are covered with valuable forests, and lumbering is of some importance. The region is known to be rich in iron and other metal ores, but as yet mining is carried on only in a few places and on a small scale.

Most of the Slovaks are farmers. The best farm lands are in the parts of the Plain of Hungary which extend into Slovakia, but there are also many farms in the valleys among the mountains. Foodstuffs produced here help to feed the people in the industrial districts of Bohemia and Moravia.

Prague (Praha). The capital of Czechoslovakia is the fine old city of Prague, on the Moldau River, which is tributary to the Elbe. Find Prague on the map on pages 188–189 (*O3*). What reason can you give for the fact that the capital of Czechoslovakia is in Bohemia rather than farther east?

Prague is the railroad center of Bohemia and has an outlet to the sea by way of the Elbe River. Because of its central location in the busiest part of Czechoslovakia it is the largest city and the great commercial center of the country. *See Figure 257.*

Raw materials from distant lands come to Prague from Hamburg by way of the Elbe and are distributed to other parts of the country, and manufactured products from Czechoslovakian mills and factories are collected here for export. Among the manufacturing plants in Prague itself are cotton mills, machine shops, glass factories, and chemical works.

Czechoslovakia's trade. The exports and imports of Czechoslovakia show clearly how greatly the people depend on manufacturing. Among the imports raw cotton and wool are by far the most valuable, and many other raw materials are imported. Wheat and other foodstuffs also are purchased from other countries, showing that although farming is well developed in Czechoslovakia, the people need more food than they produce. By far the most important exports are textiles, followed by iron and steel goods, refined sugar, glassware, and shoes.

For a landlocked country Czechoslovakia has unusual advantages for trade. It extends east and west for 600 miles through central Europe, and is crossed by several of the main north-south railroads of the continent. These railroads, with others that run east and west, connect it with all parts of Europe. Although it has no seacoast, its location is such that it can use three of the internationalized rivers: the Elbe leading to the North Sea, the Oder leading to the Baltic Sea, and the Danube leading to the Black Sea. *See Figure 258.*

Much of Czechoslovakia's trade is with the neighboring countries, but it obtains from many distant lands raw materials for its textile and leather industries. Our own country supplies part of the raw cotton, and in return purchases Czechoslovakian textiles and glass.

Naming cities. 1. Give the name which we commonly use for each of the following cities:

Brno Praha Warszawa Lwow

2. Complete each sentence below correctly:

a. _____, the capital of Czechoslovakia, is located in the Plateau of _____.

b. _____, the capital of Poland, is located on the _____ River.

c. _____ is the second largest city of Czechoslovakia.

d. _____ is the largest city in southeastern Poland.

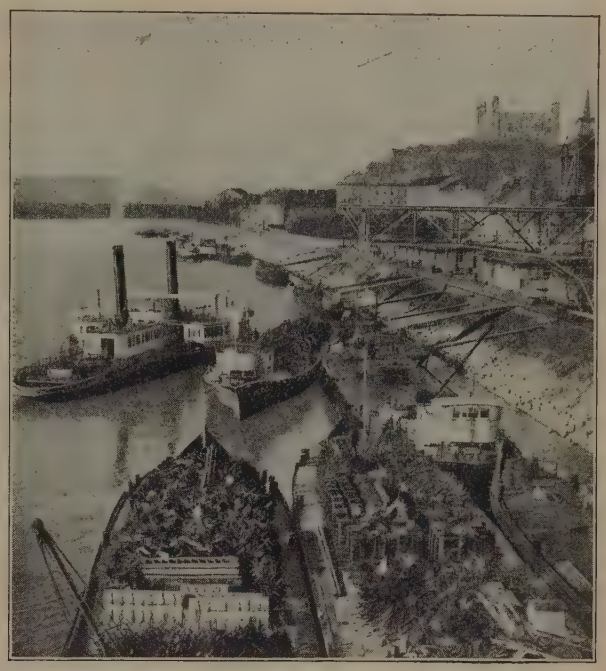


Figure 258. A view of the water front at Bratislava, Czechoslovakia's river port on the Danube. Find Bratislava on the map on pages 192–193 (*J6*) and show how barges reach this port from the Black Sea.

Giving reasons. Complete each sentence below by giving reasons for the fact which it states.

1. There are more and better farms in the western part of the plain of Poland than in the eastern part because _____.

2. Poland's wheat lands are largely in the southern uplands because _____.

3. Poland profited greatly by obtaining part of Silesia because _____.

4. The Carpathian region is valuable to Poland because _____.

5. The Bohemian Plateau is well suited to farming because _____.

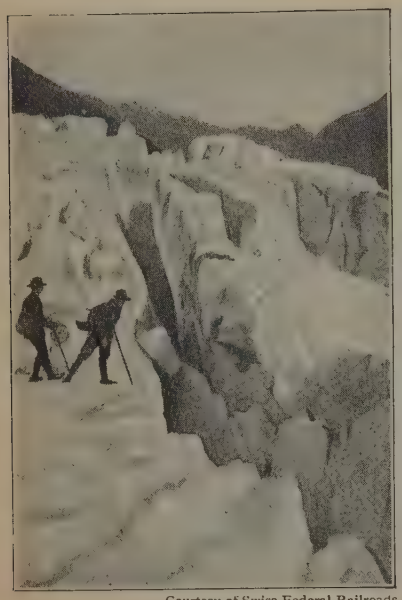
6. The Bohemian Plateau is one of the great industrial regions of Europe because _____.

7. Both Poland and Czechoslovakia have many sugar factories because _____.

8. Glassware is one of the important manufactures of Czechoslovakia because _____.

9. For a landlocked country Czechoslovakia has unusual advantages for trade with distant lands because _____.

10. The Poles are building wharves, docks, and warehouses at Gdynia because _____.



Courtesy of Swiss Federal Railroads

Figure 259. Mountain-climbers looking into a deep crevasse, or crack, in a glacier in the Swiss Alps.

Courtesy of Swiss Federal Railroads

Figure 260. A hockey match at Davos, one of the famous winter resorts in Switzerland. At these resorts the skating rinks are lighted by electricity at night, and workmen keep the ice in perfect condition night and day.

IV. SWITZERLAND, AUSTRIA, AND HUNGARY

Foreword. On the map on pages 188–189 find the small inland countries of Switzerland, Austria, and Hungary, and compare their surface. What striking difference do you find between Hungary and the other two countries?

Switzerland has been an independent country for several hundred years, and at present it is much more prosperous than Austria or Hungary. Do you know of any reasons for its prosperity? Be on the watch for them as you study this section.

Austria and Hungary have been independent only since the World War. They are about the same size, but in surface and resources they are almost exact opposites. Which of them do you think is an agricultural country? Judging from the map, what kinds of work do you think are important in the other country?

Life in the high Alps. The people of the high Alps of Switzerland and western Austria have very small farms in the valleys and on the lower mountain slopes, and they depend chiefly on dairying. One or two of the men or older boys in each family take the cows to the high pastures above the tree line to graze during the summer. While they are there they make butter and cheese, and send them down to the valleys to be sold.

In the meantime those who remain on the farms are busy raising forage crops and cutting hay to feed the cows during the long, cold winter, when the ground is covered with snow. In the autumn the herdsmen return from the mountain pastures with the cows, and the out-of-door farm work is over for the year.

These mountain people usually spend the winter months doing some kind of handwork. Many of the men carve toys and small ornaments of wood, and many of the women make laces and embroideries. Most of these articles are beautifully made, and their sale adds considerably to the income of the people.

Courtesy of Swiss Federal Railroads

Figure 261. In a watch factory in Switzerland. Swiss watches are well known the world over, and thousands are sold each year in our own country.

A world playground. The Alps attract large numbers of visitors from all over the world, both in summer and in winter. These rugged mountains, with their forest-clad slopes, their sharp, rocky peaks, their glaciers and waterfalls, provide some of the most wonderful scenery in the world, and this alone brings thousands of people to the Alps. In summer many of the visitors come to tramp over the glaciers and climb the mountain peaks. In the winter the Alps become a great playground for people who enjoy skating, skiing, sleigh-riding, and tobogganning. *See Figures 259 and 260.*

Many hotels have been built to house the visitors, and thousands of people in Switzerland and Austria make part or all of their living by caring for the needs and wants of the guests. The visitors also provide much business for the railroads, the motor-bus companies, and the shops and stores.

A manufacturing country. Switzerland is too mountainous to be an important farming country; and since it has no coast line, the people cannot turn to the sea as the Norwegians have done. So, although they have almost no coal or iron ore, the Swiss have found ways to become a manufacturing nation.

To make up for the lack of coal, the Swiss use their swift-flowing mountain streams to make electricity for light and power. Few raw materials are produced in the country, and so the Swiss specialize in the manufacture of products which require much skill in the making rather than large quantities of bulky raw materials. *See Figures 261 and 262.*

Among the manufactures are watches and clocks, jewelry, laces and embroideries, fine cotton and silk goods, light machinery, delicate tools and instruments, chocolate, and condensed milk. How do you explain the importance of the last two items in this list?

How the Swiss trade with the world. The highest ranges of the Alps are in the south of Switzerland, and there the Swiss people have built wonderful tunnels by means of which railroads from the north cross the mountains to the seaports of Italy. These tunnels make

Courtesy of Swiss Federal Railroads

Figure 262. One of the places in Switzerland where a stream has been dammed for power. You can see part of the great dam at the left. Nearly all the Swiss railroads are run by hydroelectric power obtained by harnessing the swift-flowing streams.

Courtesy of Swiss Federal Railroads

Figure 263. Looking over the roofs of Zürich toward the Lake of Zürich and the snow-capped Alps. Across the river in the picture you can see some of the mills which make Zürich a busy center for the manufacture of silk goods and cotton goods. Nearer the lake is the principal business and shopping district of the city.

Switzerland a meeting place for several of the railroads which connect northern and southern Europe, and the railroads provide the country with excellent means of transportation for carrying on trade. Switzerland can also use the internationalized waterway of the Rhine. Its trade with distant lands is carried on through Rotterdam, Antwerp, and Havre in the north, and through Genoa and Marseille in the south. On the map on pages 192–193 point out the railroads and waterways which connect Switzerland with these ports.

Cities of the Swiss plateau. Most of the people of Switzerland live in and near the plateau region in the northwest. In this region, surrounded by the best farm lands of the country, are the largest cities: Zürich, Basel, Geneva, and Bern. Find these cities on the map on pages 188–189 (*K–L5*). Which one is the capital of Switzerland? Which one is on the Rhine?

All these cities are busy industrial centers with textile mills, factories for making metal goods, and many other manufacturing plants. Bern is the capital of Switzerland, and Zürich is the largest city of the country. Basel is Switzerland's port on the Rhine, and Geneva, on a beautiful lake of the same name, is the meeting place of the League of Nations. *See Figure 263.*

Manufacturing in Austria. Austria, like Switzerland, is so mountainous that its people must depend largely on manufacturing. As yet its industries are not so well developed as those of Switzerland, chiefly because Austria has so recently become an independent country. On the whole, it has greater advantages for manufacturing than Switzerland; for it has greater forests, more coal, and some of the best iron ore in Europe. Like Switzerland, Austria is fortunate in having much water power. *See Figure 264.*

Among the best-developed industries at present are the manufacture of iron and steel, machinery, cotton goods and other textiles, wood pulp and paper, and leather and shoes. The iron-and-steel industry is located in the east near the iron mines, and the leading textile district is in the narrow western part of the country. For the textile mills and also for the pulp and paper mills much hydroelectric power is used.

By Burton Holmes from Ewing Galloway

Figure 265. The Houses of Parliament in Vienna, where representatives from all parts of Austria meet to carry on the government of the republic. They face a circular avenue called the Ring.

Vienna (Wien). Vienna, the capital of Austria, is a surprisingly large city to be the capital of a small country. It stands fifth in population among the cities of Europe, and in it live more than a fourth of all the people of Austria. It was formerly the capital of the empire of Austria-Hungary, and long before the World War that fact and its location had made it a great center of business, trade, and manufacturing. *See Figure 265.*

Find Vienna on the map on pages 188–189 (*P4*). Notice its location on the Danube at the place where that great river leaves the highlands and enters the plain. Notice that it is also located at the southern end of the Moravian corridor. The Danube Valley and the Moravian corridor have long been great routes of travel and transportation, and Vienna, at the meeting point of these routes, is one of the great "crossroads" of Europe. Prove by the map on pages 192–193 that railroads from all directions meet there.

Now that Vienna is the capital of a small country instead of a great empire it is not so prosperous as it once was, but it is still a very important city. Thousands of people find work in its banks and business offices, and its mills and factories. Its busy wharves along the Danube tell of its river trade, and its large freight yards tell of its trade by land.

Vienna is a very beautiful city, with broad streets, many parks and gardens, and many fine public buildings. Like so many of the large European cities, it is a center of learning and culture, and it has some wonderful art galleries.

Austrian Federal Railroads

Figure 264. A mountain of iron ore in eastern Austria. The ore is mined with steam shovels from huge terraces cut in the side of the mountain. On the terraces are railroad tracks for the ore cars.

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Figure 266. Cattle grazing on the Plain of Hungary. The cattle are watered from wells such as you see in the picture. Why is Hungary an important stock-raising country?

Hungary — an agricultural country. Hungary is entirely different from Austria, for it is almost wholly a plain. It has but little coal, its water power is small, and it is poor in metal ores. Almost its only resource is its soils, for the Plain of Hungary is a fertile grassland like our prairies. For these reasons three fourths of the people of Hungary are farmers, and they raise many different crops and large numbers of cattle, sheep, and pigs. *See Figure 266.*

From the map on pages 188–189 name the leading grain crops of Hungary. Wheat ranks first, and is the most valuable money crop. Shut in by mountains, the plain has hot summers, and chiefly because of this it is one of the few regions of Europe where much corn is raised. *See Figure 267.*

Other crops of importance are rye, barley, and potatoes. Tobacco is a money crop in the northeast; and in certain parts of the plain, sugar beets and hemp are grown.

Farm products for trade and manufacture. The Hungarian farmers produce much greater quantities of grain and meat animals than are needed for the home markets. Because of this, there is a large surplus of wheat, flour, and other foodstuffs for export to the more densely populated industrial countries of Europe.

Manufacturing is of little importance compared with farming, and the principal industries are those which make use of farm products. Among them flour-milling, sugar-refining, and the making of leather are important.

Hungary's capital. Hungary's only large city is its capital, Budapest. Find this city on the map on pages 188–189 (*R5*). Notice its location in the north-central part of the country, near the sharp bend in the Danube. What advantages for trade has this location? Turn to the map on pages 192–193 and see if Budapest is a railroad center.

Budapest is a beautiful city, made up of two parts: Buda on the hills on the west bank of the Danube, and Pest on the lowland on the east bank. A great bridge connects the two parts. Budapest is sometimes called the "Minneapolis of Europe" because of its many large flour mills. It has other kinds of manufacturing plants also, and is the leading industrial and commercial city of Hungary.

By Ewing Galloway, N.Y.

Figure 267. A Hungarian family husking corn outside their house. In Hungary, as in our country, much of the corn is used to feed and fatten cattle and pigs.

Explaining differences. This test will help you to prove that you understand the more important differences between Switzerland, Austria, and Hungary. Start each sentence with the name or names which make it correct, and complete it by giving reasons.

Of these three countries

1. Switzerland and Austria are the ones which are not well suited to farming because MTS.

2. HUNGARY is the one which is almost wholly a farming country because _____.

3. AUSTRIA is the one which has the greatest advantages for manufacturing because COAL AND IRON AND WATER POWER.

4. SWITZERLAND is the one which carries on the most manufacturing because M.T.S.

5. AUSTRIA is the one in which mining is important because NATURAL RESOURCES.

6. HUNGARY is the one in which the people produce a surplus of farm products for export because GOOD FARMING LOCATION.

7. S_____ and AUSTRIA are the two which entertain large numbers of visitors each year because _____.

Can you name these rivers? Name each river described below:

1. The river which provides a waterway from Warsaw to the Baltic Sea. Vistula

2. The river which provides Czechoslovakia with a waterway to the German seaport of Hamburg. Elbe

3. The river which provides a waterway from German Silesia to the port of Stettin.

4. The river which provides a waterway from Switzerland to the Dutch port of Rotterdam.

5. The river which provides Czechoslovakia, Austria, and Hungary with a waterway to the Black Sea.

Giving reasons. Give as many reasons as you can why

1. Berlin is a much larger and more important city than Warsaw.

2. Vienna, the capital of a small country, is one of the great cities of Europe.

3. Hamburg is a much more important port than Danzig.

A population test. Below is a table showing the density of population in the countries of central Europe. Study the table carefully, and then answer the questions following it.

Country	Population per Square Mile
Germany	352
Czechoslovakia	266
Switzerland	252
Hungary	240
Austria	206
Poland	201

1. Of the six central European countries, which three lead in manufacturing? What relationship does the table above show between manufacturing and density of population in these countries?

2. What reasons can you suggest for the fact that Germany stands at the head of the list in density of population, while its neighbor, Poland, stands at the foot?

3. What reasons can you give for the fact that Austria has fewer people per square mile than Hungary? than Switzerland?

4. If the people of Austria should follow the example of Switzerland, and increase their manufactures, what effect would this probably have on the density of population? Do you think it possible that in time Austria might be able to support even more people per square mile than Switzerland? Give reasons for your answer.

Matching countries and capitals. Match correctly the countries and capital cities listed below:

Germany	Bern
Poland	Berlin
Czechoslovakia	Budapest
Switzerland	Prague
Austria	Vienna
Hungary	Warsaw

Special credit work. 1. Hunt in old magazines for pictures taken in the Alps, and make a collection of them to show your class.

2. Try to find a book which tells some of the interesting old legends connected with the Rhine. Perhaps your teacher will let you tell one of these stories to your classmates.

Photograph by Burton Holmes from Ewing Galloway

Figure 268. A view of Cadiz, an old city on the southern coast of Spain. For many years after the discovery of America Cadiz was the headquarters of the ships which brought gold and silver from the New World.

Figure 269. The house in Genoa where Columbus is believed to have lived when a boy.

SOUTHERN EUROPE AND ANATOLIA

I. MEDITERRANEAN BORDERLANDS

1. Foreword

The largest inland sea. The Mediterranean Sea is the largest inland sea in the world. From the Strait of Gibraltar it extends eastward for 2200 miles, and it touches three continents — Europe, Asia, and Africa. Toward its eastern end it is connected with the Black Sea by the Sea of Marmara and the narrow straits of the Dardanelles and the Bosporus. What canal connects the Mediterranean Sea with the Red Sea?

The Mediterranean peninsulas. On the map on pages 274–275 find the three great peninsulas of southern Europe. The westernmost one is the Iberian Peninsula, between the Atlantic Ocean and the Mediterranean Sea. What two countries occupy this peninsula? Which country is the larger?

Farther east, extending into the central part of the Mediterranean Sea, is the boot-shaped peninsula of Italy, bordered by two arms of the Mediterranean — the Tyrrhenian Sea on the west and the Adriatic Sea on the east. What country borders the Mediterranean between Spain and Italy?

Toward the eastern end of the Mediterranean is the Balkan Peninsula, which includes the land between the Adriatic and Ionian seas on the west and the Ægean and Black seas on the east. Lying wholly or partly within the Balkan Peninsula are six countries — Greece, Albania, Yugoslavia, Rumania, Bulgaria, and Turkey. Find each one of them on the map.

The map shows that only a small part of Turkey is in the Balkan Peninsula. Much the greater part of this country is in the pen-

insula of Anatolia, between the Black Sea and the Mediterranean. Anatolia is part of Asia, and is often called Asia Minor, which means "smaller Asia."

Mediterranean peoples of long ago. Long before any strong nations had grown up in central and northern Europe, there were groups of very advanced people living in some of the lands bordering the Mediterranean Sea. The earliest of these peoples were the Egyptians, who lived in the Nile Valley in Africa. More than five thousand years ago they were carrying on agriculture and trade, and some of their pharaohs, or rulers, built the wonderful pyramids which you will see when you visit Egypt.

At the eastern end of the Mediterranean, on what is now the Syrian coast, lived the Phœnicians. They became great traders, and were the first seafaring people of the Mediterranean. Later the Greeks came into power, and for a time their capital city of Athens was the greatest center of art and learning in the world. Still later the Romans conquered the Greeks. The Romans, who lived in what is now Italy, were great soldiers and lawmakers, and at one time they controlled all the lands bordering the Mediterranean.

A training school for seamen. Because the Mediterranean is an almost landlocked sea, it is calmer and safer for ships than the open oceans. Therefore, long before men living along the Atlantic coast of Europe ventured far from shore, Mediterranean sailors were crossing and recrossing their inland sea on trading trips which took them out of sight of land. Thus the Mediterranean became the first training school for European seamen, and the Mediterranean countries furnished the earliest of the world's great explorers.

You will recall that Columbus was born in Genoa, on the shores of Italy, and that he made his voyages of discovery in the service of Spain. At that time the Spanish and the Portuguese were among the foremost nations of Europe, and they took a leading part in exploring and settling distant parts of the world. *See Figures 268 and 269.*

You will also recall that Vasco da Gama, who discovered the route around Africa to India, was a Portuguese sea captain. Another great Portuguese explorer was Ferdinand Magellan, who planned the first trip around the world. Magellan died in the Philippine Islands, but his voyage was completed by one of his captains, a Spaniard named Del Cano. Trace the route of this famous voyage on the map on pages 382–383.

Lands won and lost. On the map on pages 382–383 find the lands explored by the Spanish and Portuguese. How does the location of Spain and Portugal explain the fact that the Spanish and Portuguese played a greater part in the early explorations than the other Mediterranean nations?

You learned in your study of the Americas how Spain and Portugal lost their colonies in the New World. Turn to the map on page 282 and find the colonial possessions of Spain and Portugal today. Find also the possessions of Italy. In what continent are nearly all of these possessions located?

Can you answer these questions? Review some of the facts which you have learned about the Mediterranean lands in earlier chapters of this book by answering the following questions:

1. Why is the Mediterranean Sea a great highway of travel and transportation? 2. What nation controls the gateways to the Mediterranean? 3. What Mediterranean lands of Africa belong to France? 4. What Mediterranean islands belong to Great Britain? 5. What Mediterranean island belongs to France? 6. What country at the eastern end of the Mediterranean is under British protection? under French protection?

Something to do. If any members of your class were born in southern Europe or if any of their families came from there, point out their European homelands on the map.

Figure 270. A valley in the Pyrenees, showing a small flour mill surrounded by cultivated fields. The mill is run by water power from a mountain stream. How do you think the steep mountain slopes are used?

2. First Glimpses of the Mediterranean Peninsulas

The various nations of southern Europe speak different languages and have somewhat different customs, yet there are many likenesses in the ways in which they use the lands in which they live. In order to understand why they live and work as they do, we need to picture to ourselves the great peninsulas which are their homelands. With the three European peninsulas we shall also study the peninsula of Anatolia.

As you read further, ask yourself this question: Are the Mediterranean peninsulas more favorable, or less favorable, for the growth of strong nations than the lands of central and northwestern Europe?

The Natural Regions

The mountain regions. In studying the map on pages 274–275 did you notice how much of southern Europe and Anatolia are mountainous? As you read the next few paragraphs trace the mountain ranges on the map.

First find the place where the Alps border the beautiful Riviera coast of France and Italy. Near Genoa the Alps join the Apennines, which make up most of the peninsula of Italy. The Apennines are lower than the Alps, and there are no glaciers or snow fields among their summits.

From the "toe" of Italy the mountains extend westward through Sicily, and appear again in northern Africa. Beyond the Strait of Gibraltar they curve eastward, forming the rugged Sierra Nevada of Spain. Farther north the Pyrenees rise like a great wall between Spain and France. *See Figure 270.*

From the eastern end of the Alps in Austria the mountain ranges swing southeastward, joining other ranges which stretch southward through the Balkan Peninsula. The Carpathians too make a great curve to the south, joining the Transylvanian Alps of Rumania. These mountains, in turn, join the Balkan Mountains, which extend eastward through Bulgaria to the Black Sea. The mountains of the Balkan Peninsula continue eastward through the peninsula of Anatolia, and the many islands in the Ægean Sea are peaks of mountain ranges which long ago connected Greece with Asia Minor.

The plateaus. You will see from the map that most of the Iberian Peninsula is a plateau. This plateau is called the Meseta, and its highest parts are from 3000 to 5000 feet above sea level. The northern and southern margins are mountainous, and through the center there are east-west mountain ranges and river canyons which make travel from north to south difficult.

Figure 271. Mediterranean borderlands. Lands of "Mediterranean climate" are shown by slanting lines.

The map also shows that there is a plateau region in Rumania and another in Anatolia. The one in Rumania is called the Plateau of Transylvania, and the other is called the Plateau of Anatolia. Notice that both of them are encircled by mountains.

The lowlands. Turn to the map on pages 274–275 and find the few lowland regions of southern Europe. Notice especially the Plain of the Po in northern Italy, the plain of the lower Danube in Rumania and Bulgaria, and the part of the Plain of Hungary which extends into Rumania and Yugoslavia. These are the best farm lands in southern Europe.

Some Differences in Climate

The Mediterranean climate. Figure 271 shows the parts of the Mediterranean borderlands which have what is called the "Mediterranean climate." In such a climate the summers are hot and dry. The winters are mild and rainy, but between the storms there are days of clear, bright sunshine.

During the northern summer, when all the wind belts of the earth move northward, the Mediterranean basin is in the belt of the northeast trade winds. These winds, blowing from the lands of eastern Europe toward the southwest, have little or no moisture, and therefore summer is a season of drought. During the northern winter, when the wind belts move southward, the Mediterranean basin is in the belt of the rain-giving westerly winds from the Atlantic Ocean. That is why winter is the rainy season.

During the hot, dry summer the earth is parched and dusty, the grasses wither and turn brown, and even the leaves on the trees look dry and lifeless. With the coming of the winter rains new grass springs up, flowers begin to bloom, the trees take on new life, and the landscape changes from brown to green.

Other kinds of climate. The parts of southern Europe and Anatolia which lie outside the limits of the Mediterranean climate have colder winters. Among these regions the Plateau of Anatolia and the interior of the Spanish Meseta have the most unfavorable climate for farming, for they have very dry summers as well as cold winters.

Photograph by Ewing Galloway, N.Y.

Figure 272. Threshing wheat in Greece. The farmers have spread out the wheat on the ground, and the oxen and donkey are trampling on it to separate the seeds from the stalks.

Elsewhere, most parts of southern Europe beyond the limits of the Mediterranean climate have rain at all seasons, usually more in summer than in winter. Their climate is much like that of central Europe, and is favorable for farming because rain falls during the growing season.

Farm Lands and Pasture Lands

Lands where farming is difficult. In spite of the fact that most parts of the Mediterranean peninsulas are hilly and mountainous, far more than half of all the people are farmers. The rougher regions make poor farming lands, but the people use them as best they can. In these regions most of the farmers work much as their ancestors did hundreds of years ago. They plant and harvest their grain by hand, and many of them do their threshing by the method shown in Figure 272.

These farming people of the rougher regions manage to make a living, but most of them are very poor. Their poverty is not their own fault, for most of them are hard workers. It is due, rather, to the fact that they are trying to live by farming in lands not well suited to that use.

The better farm lands. The better farm lands are the lowland regions along the coasts and in the valleys of the larger rivers. The largest and most important of these regions are the Plain of the Po in Italy and the plains of Yugoslavia and Rumania.

These lowlands are beyond the limits of the Mediterranean climate and do not suffer from summer drought. Thus in climate as well as surface they are better suited to farming than most parts of southern Europe.

Farming in the Mediterranean climate. In the lands of Mediterranean climate farming goes on the year round. During the summer the farmers are busy raising fruits — chiefly grapes, olives, figs, oranges, and lemons. Most of the citrus-fruit groves are irrigated, but the grapevines and the olive and fig trees can stand the summer drought and therefore do not need irrigation. In certain places nuts of various kinds are also important crops.

The principal winter crops are wheat and barley. They are planted in the autumn just before the first rains are expected, and they grow steadily during the mild, rainy winter. After the winter rains are over, they ripen quickly in the hot sun and are ready to be harvested in the late spring. Earlier in the spring, while the moisture from the winter rains is still in the ground, the farmers plant crops of vegetables which they harvest before the hottest and driest part of the summer begins.

How the Mediterranean crops are used. From the grapes and olives the people make large quantities of wine and olive oil. Wine is the principal drink of the Mediterranean na-

tions, and olive oil takes the place of butter at meals and of lard and other fats for cooking. Both wines and olive oil are produced in such large quantities that there is a surplus for export. Oranges and lemons are also valuable exports, as well as dried figs, raisins, currants, and nuts.

There is no surplus of the winter crops of grain; for the Mediterranean people need all that they can raise, and they even have to import additional supplies of wheat. Most of the vegetables also are used at home, though a few special varieties are grown in sufficient quantities for export.

Figure 273. Turkish shepherds with their sheep in Anatolia. Many parts of the Plateau of Anatolia which are too dry for farming have enough grass for the raising of sheep and goats.

The pasture lands. There are no great ranches in southern Europe and Anatolia, but many of the people make at least part of their living by keeping live stock. In the rougher regions many of the farmers keep sheep or goats, pasturing them on the slopes that are too steep and rocky for crops. In the driest regions, such as the Plateau of Anatolia and parts of the Spanish Meseta, the raising of sheep and goats is more important than farming. *See Figure 273.*

In certain other regions, especially in the Balkan Peninsula, large numbers of pigs are pastured in the forests of oak and beech trees, where they eat the acorns and beechnuts which fall to the ground.

Mediterranean Fisheries

Making a living from the sea. Along the shores of the Mediterranean peninsulas there are little villages where many of the people make their living by fishing. Visitors always enjoy watching the fishermen as they start out in the early morning in their little boats with colored sails, or as they come sailing home with their day's catch.

The principal kinds of fish caught along these coasts are sardines and tunny. There is always a good market for them, for fish is a very important food in these Mediterranean lands — so important that the people also import large quantities of salted codfish, chiefly from Norway and Newfoundland.

Along the shores of Sicily, Italy, and Greece many men make a business of dredging or diving for sponges. Others prepare the sponges for use by washing, bleaching, and drying them.

Some things to explain. Explain why

1. The Mediterranean borderlands of southern Europe have winter rains and summer drought.
2. Farming goes on the year round in the lands of Mediterranean climate.
3. Wheat and barley are winter crops in those lands.
4. Grapes and olives are crops well suited to the Mediterranean climate.

A check. Turn back to page 266 and read again the question in the second paragraph of this section of the text. From what you have learned thus far, how should you answer it? What reasons can you give for your answer?

U. S. Department of Commerce

Figure 274. One of the iron mines in northern Spain, near Bilbao. The deposits of iron ore in this part of Spain are among the richest in Europe, and they have been worked ever since the days when the Romans ruled the Mediterranean lands. Today Bilbao exports more iron ore than any other seaport of Europe.

II. SPAIN AND PORTUGAL

Foreword. As you know, in the days of Columbus Spain and Portugal were among the leading countries of Europe. Little by little, however, they have lost the high rank which they once held, and other European countries farther north have outstripped them in prosperity and power. These facts suggest that Spain and Portugal must suffer from handicaps which have hindered their growth in modern times. Try to discover what these handicaps are as you study this chapter.

1. A Visit to the Iberian Peninsula

Let us imagine that we have chartered a boat for a visit to Spain and Portugal. We shall stop at the more important seaports, and take time to make some trips inland. This will give us an opportunity to find out why these countries are less prosperous than those farther north in Europe. On this trip keep the following questions in mind and try to find answers for them:

1. What natural resources have Spain and Portugal, and how do the people make use of them?

2. What do these countries export and import, and why?

Spain's iron-and-coal district. We shall sail first for Bilbao, a port on the northern coast of Spain. There we shall probably see some British ships loading iron ore. Spain is rich in metal ores, and the iron ore in the north is one of its most valuable resources. Find Bilbao on the map on pages 274–275 (*C2*) and notice that northern Spain has coal mines as well as iron mines. *See Figure 274.*

Bilbao and Santander, farther west, have blast furnaces and steel mills, but as yet the

Figure 275. A boat on the Douro River, loaded with kegs of wine. Kegs of Port wine are sent down to Oporto in river boats, in trains, and in oxcarts.

iron-and-steel industry of Spain is not very great. That is because the Spanish have been slow to develop manufacturing industries, and only in recent years have they made an effort to use their iron ore in any large measure to manufacture iron and steel. At present about half the iron ore mined in Spain is exported, chiefly to Great Britain, and iron and steel goods are imported from that country.

Northwestern Spain. As we sail westward from Bilbao and swing around the northwestern corner of Spain, we shall be passing a hilly coast with many harbors and little fishing villages which will remind us of Brittany. Very likely we shall see some sardine fishermen in their boats.

This northwestern corner of Spain is in the path of westerly winds the year round, and therefore its climate is mild and moist. The land is hilly, but the valleys are fertile and there is a large farming population. This is Spain's "land of cattle and corn," for it is the only part of the country where the pasturage is rich and there is rain enough in summer for the growth of corn. Rye and potatoes are also important crops, and many of the farmers keep pigs as well as cattle.

A stop at Oporto (Porto). Our next stop is at Oporto, the seaport of northern Portugal. Find Oporto on the map on pages 274–275 (*B2*) and notice its location at the mouth of the Douro River. As we approach the mouth of the river we catch glimpses of vineyards and olive groves in the distance. The olive groves are a sign that we have reached the part of the coast of the Iberian Peninsula where the "Mediterranean" climate begins.

On the wharves at Oporto we shall see barrels and kegs of wine ready for export, for this city is the shipping point for the "Port" wines for which Portugal is famous. These wines come from vineyards in the sunny valley of the Douro River, where tons and tons of grapes are grown each year, and in value they make up more than a fourth of all Portugal's exports. *See Figures 275 and 276.*

Photograph by Burton Holmes from Ewing Galloway

Figure 276. A view of Oporto, showing the steel bridge over the Douro River. Fair-sized ocean ships can come up the river to Oporto; but since the Douro is not very deep, a harbor for larger ocean ships has been built three miles north of the mouth of the river.

Figure 277. Portuguese fishermen pulling up a net full of sardines. Sardines are caught all along the coast of Portugal, and they form one of the most valuable export products of the country.

From the map on pages 274–275 tell what you expect to see being unloaded from ships from distant lands at Oporto. The cotton goes to mills in the city, for Oporto is a textile-manufacturing center of some importance. Can you prove by the Portuguese imports that the people do not manufacture sufficient cotton goods for their needs?

Portugal's capital. Steaming southward from Oporto, we soon reach Lisbon (Lisboa), the capital and largest city of Portugal. Find Lisbon on the map on pages 274–275 (*B3*). Near the mouth of what river is it located? What are its leading exports?

Lisbon is an attractive city, built on hills which slope down to the Tagus. It has an excellent harbor, and it became a busy seaport in the days when the Portuguese were among the great exploring and trading nations of the world. It is still the leading seaport of Portugal, but it has lost the high rank which it once held among the ports of the world.

A trip inland from Lisbon. If we travel north or south from Lisbon, or up the Tagus Valley, we shall see why fruits and nuts are among the leading exports of Portugal. We shall find the hillsides, as well as the lowlands, dotted with vineyards and with groves where olives, figs, oranges, almonds, and other fruits and nuts are grown. You already know how well the Mediterranean climate is suited to these crops, and why, therefore, there is a surplus for export.

In southern Portugal we shall discover where the cork that is exported comes from. Cork oaks, like olive and fig trees, can withstand summer drought, and they grow wild in southern Portugal. Some of the cork is gathered from the wild trees, but even more from trees in planted groves. The sheets of cork are sent to factories in Lisbon, where they are dipped in hot water, pressed flat, and dried. Some of the cork is exported in this form, but from much of it bottle corks are cut by machinery, and these too are exported in large quantities. Portugal is one of the leading countries of the world in the production and exportation of cork, and our own country is one of the best customers for it.

Perhaps we can plan to have our boat meet us at the fishing port of Setubal, south of Lisbon. There we shall see canneries where large quantities of sardines caught by Portuguese fishermen are packed in tins and sent to Lisbon for export. *See Figure 277.*

Resources that are not fully used. During our travels in Portugal we shall find the people raising corn, wheat, rye, and other crops in various places. We shall notice, however, that most of the farmers do their work in simple, old-fashioned ways. As a result, most of them are poor, and they do not raise enough grain to supply the needs of the country.

We shall also discover that while Portugal has considerable mineral wealth, little mining is done. Coal is not plentiful, but there are valuable resources of metal ores which might be mined in much greater quantities than they are today.

De Cou from Ewing Galloway, N.Y.

Figure 278. One of the narrow streets in old Seville. The canopies over the street are put up to protect the passersby from the heat of the sun.

De Cou from Ewing Galloway, N.Y.

Figure 279. A Spanish cart bringing a load of cork bark to a factory in Seville. This is a common means of transportation in southern Spain.

Finally, we shall discover that Portugal is not very well supplied with first-class railroads, and that many of the roads are very poor. For this reason the commonest means of transportation in many parts of the country is the slow-moving oxcart. Poor transportation is perhaps the greatest of the handicaps to the development of the resources of Portugal.

A trade test. From the map on pages 274–275 make a list of the leading exports of Portugal and another of the leading imports. Then answer the following questions:

1. Why are wines, cork, and fruits among the leading exports of Portugal?
2. How are the imports of tin plate connected with the exports of sardines?
3. Which of the imports shows that the Portuguese farmers do not raise enough grain to supply the needs of the people?
4. What imports suggest the fact that Portugal is not an important manufacturing country?
5. What imports suggest the trade of Portugal with its African colonies?
6. What reason can you give for the fact that the Portuguese carry on a considerable trade with Brazil?

"Sunny Spain." Have you ever heard people speak of "sunny Spain"? They mean southern and eastern Spain, with its brilliant sunshine and its bright blue skies. This part of Spain has a "Mediterranean" climate.

Up the Guadalquivir to Seville. We shall get our first glimpse of "sunny Spain," with its vineyards and its fruit groves, as we steam up the Guadalquivir River to Seville (Sevilla). Find Seville on the map on pages 274–275 (*B3*). Although it is about 70 miles inland, it is a seaport, because the Guadalquivir River has been made deep enough for good-sized ocean-going ships.

Seville is a very old city, with narrow, winding streets and some beautiful public buildings. Most of the buildings are only two or three stories high, and many of the houses are built around open courts, or *patios*, planted with flowers and small trees. Where in the Americas did we find houses of this style?

Seville is the business center of the Guadalquivir Valley, and the chief port of export for the wines, olive oil, and fruits which are the leading products of that region. The city also has a few manufacturing plants, among which cork factories are important. Southwestern Spain, like southern Portugal, has many groves of cork oaks. *See Figures 278 and 279.*

Map Plate, Patented July 5, 1921 • Method of Making Maps, Patented July 5, 1921

G Danzig 20° Warsaw H Longitude 25° East J from 30° Greenwich K 35° Moscow • L 40° M 45°
GERMANY
Krakow
Ostrava
Moravská
Lemberg
POLAND
CARPATHIAN MTS.
Vistula R.
CZECHOSLOVAKIA
Košice
Mukačevo
Bratislava
Budapest
Debreczen
HUNGARY
Oradea Mare
Cluj
Szeged
Arad
Temesvar
Subotica
Zagreb
Drava R.
Sava R.
YUGOSLAVIA
Belgrade (Beograd)
Banjaluka
Sarajevo
Mostar
Cattaro
Skoplje
Nish
Sofia (Sofiya)
BULGARIA
Philippopolis (Plovdiv)
Adrianople
Scutari
Durazzo
Tirana
Bitolj
Brindisi
Taranto
Valona
Gulf of Taranto
Corfu
CORFU I.
Larissa
Volos
Yannina
Saloniki
Oritsa (Olympus 9750')
ALBANIA
GREECE
Athens (Athenai)
Patras
Corinth
Piraeus
Kalamata
C. Matapan
CERIGO I.
Reggio
Messina
Syracuse
Siracusa
IONIAN SEA
IONIAN ISLANDS
Berdichev
Zinovievsk
Nikolaev
Odessa
Kherson
Kishinev (Chișinău)
Cernauti
Jassy
Galați
Ismail
Mouths of the Danube
Brăila
Ploesti
Craiova
Bucharest (București)
RUMANIA
TRANSYLVANIAN ALPS
Danube R.
Pleven
Russe
Varna
Constantsa
Dniepropetrovsk
Dnieper R.
Don R.
Taganrog
Rostov
Novo Cherkask
Berdiansk
Stavropol
SEA OF AZOV
Kertch
Kuban R.
Krasnodar
CRIMEA
Simferopol
Feodosiya
Sea of Kertch
Novorossiisk
Mt. Elbrus 18,465
CAUCASUS MTS.
Sevastopol
Yalta
BLACK SEA
Batum
MINERAL OILS TO EUROPEAN COUNTRIES
Sinope
Samsun
Trebizond
Erzerum
Ineboli
Kastamuni
Amasia
Erzingan
Sivas
Angora
Eskisheh
Kaisariye
Malatia
Kharput
Afiun Karahissar
Salt Lakes
Konia
Marash
Urfa
Aintab
Adana
Alexandretta
Aleppo
Antioch
Latakia
Hama
Homs
Ruins of Palmyra
Tripoli
Tarnaka
CYPRUS (British)
Beirut
Damascus
SYRIA (French Mandate)
Sea of Galilee
Haifa
Jaffa
Gaza
Jerusalem
TRANSJORDAN (British Mandate)
PALESTINE (Br. Mandate)
Port Said
Nile Delta
Zagazig
Suez Canal
Tanta
Suez
Cairo
Gizeh
Pyramids
Akaba
SINAI PENINSULA
Mt. Sinai 8583'
Gulf of Akaba
Beni Suef
Medinet el Faiyum
Arabian Desert
C. Mohammed
RED SEA
HEJAZ
Asyut
Kena
Ruins of Thebes
Luxor
Kharga
Isna
Aswan
First Cataract
EGYPT
Oasis of Siwa
Derna
CYRENAICA (BARKA)
Benghazi
Es Sollum
Kasr el Ajdabia
Alexandria
Gulf of Sidra
Sidra
Muktar
LIBYA (To Italy)
Candia
CRETE (To Greece)
Canea
DODECANESE ISLANDS (To Italy)
Rhodes
RHODES I.
SAMOS
IMBROS
LEMNOS
THASOS I.
Gulf of Adalia
Adalia
TAURUS MOUNTAINS
Mersina
Gulf of Alexandretta
Sea of Marmora
Bosporus
Constantinople (Istanbul)
Ereglı
Skutari
Brussa
Adrianople
Philippopolis
Karaferia
Vardar R.
Struma R.
Maritza R.
Kizil R.
Sakaria R.
Scutari
Foggia
Bari
Reggio
Messina
Syracuse
Siracusa
Taranto
Brindisi
Durazzo
Tirana
Bitolj
Valona
Gulf of Taranto
Corfu
CORFU I.
Larissa
Volos
Yannina
Saloniki
Oritsa
Athens
Patras
Corinth
Piraeus
Kalamata
C. Matapan
CERIGO I.
IONIAN SEA
IONIAN ISLANDS
Candia
CRETE
Canea
Rhodes
RHODES I.
DODECANESE ISLANDS
SAMOS
IMBROS
LEMNOS
THASOS I.
Gulf of Adalia
Adalia
TAURUS MOUNTAINS
Mersina
Gulf of Alexandretta
Adana
Aintab
Alexandretta
Aleppo
Antioch
Latakia
Hama
Homs
Ruins of Palmyra
Tripoli
Tarnaka
CYPRUS (British)
Beirut
Damascus
SYRIA (French Mandate)
Sea of Galilee
Haifa
Jaffa
Gaza
Jerusalem
TRANSJORDAN (British Mandate)
PALESTINE (Br. Mandate)
Port Said
Nile Delta
Zagazig
Suez Canal
Tanta
Suez
Cairo
Gizeh
Pyramids
Akaba
SINAI PENINSULA
Mt. Sinai 8583'
Gulf of Akaba
Beni Suef
Medinet el Faiyum
Arabian Desert
C. Mohammed
RED SEA
HEJAZ
Asyut
Kena
Ruins of Thebes
Luxor
Kharga
Isna
Aswan
First Cataract
EGYPT
Oasis of Siwa
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Kasr el Ajdabia
Alexandria
Gulf of Sidra
Sidra
Muktar
LIBYA (To Italy)
BLACK SEA
Batum
Trebizond
Erzerum
Sinope
Samsun
Ineboli
Kastamuni
Amasia
Erzingan
Sivas
Angora
Eskisheh
Kaisariye
Malatia
Kharput
Afiun Karahissar
Salt Lakes
Konia
Marash
Urfa
Aintab
Adana

Photograph by Burton Holmes from Ewing Galloway

Figure 280. Terraced farm lands on the hilly coast near Málaga. On terraces of this kind the people of southern Spain plant vineyards, orchards of fruit trees, and crops of winter wheat and barley.

Passing through the Strait of Gibraltar, we cruise along the coast of southeastern Spain, and in the distance we see the snow-capped peaks of the Sierra Nevada outlined against the clear blue sky.

The Sierra Nevada is the highest of the many ranges of mountains in southeastern Spain. In the sheltered valleys among these mountains the people raise grain, and grapes, olives, and other fruits. Málaga, the chief seaport of the region, is the center of a district where large quantities of grapes are sun-dried to make raisins. *See Figure 280.*

Mineral wealth in southern Spain. On the map on pages 274–275 find the mining centers in the southern part of the Meseta which we might visit by train from Seville. Notice that there are other mining centers in the Sierra Nevada. The copper mines are the richest in Europe, and the lead, zinc, and iron mines are also very valuable. Since Spain is not an industrial country, large quantities of its metals are exported to the manufacturing countries of western and central Europe. The port of Huelva is the shipping point for most of the exports of copper.

In studying the map did you notice where mercury, or quicksilver, is mined? In some years Spain is the world's leading exporter of this mineral product. Mercury, as you probably know, is used in thermometers and in "silvering" the backs of mirrors. It also has several other less well-known uses.

From Seville to Valencia. Leaving Seville, our boat steams down the Guadalquivir and turns eastward, passing the old Spanish port of Cadiz with its fine natural harbor. What did you learn about Cadiz on page 264? Today it is a much less important port than Seville.

Passing by the coastal lowland in which the city of Murcia is located, we round the eastern end of the mountains and soon reach Valencia, the third largest city of Spain. Find Valencia on the map on pages 274–275 (*C3*) and notice that it is located in another coastal lowland.

" Garden spots " of Spain. The lowlands of Murcia and Valencia are very dry, and yet they are among the richest and most productive regions of Spain. For many centuries they have been irrigated with water from rivers that rise in the mountains, and they are "garden spots" where all kinds of Mediterranean crops are grown.

The lowland of Valencia is one of the chief orange-growing regions of southern Europe, and as we visit its great orange groves we shall be reminded of southern California. The oranges are exported in large quantities, chiefly to the countries of northern Europe.

The city of Valencia is the business center of the lowland, and the shipping point for its oranges and other products. It also carries on some manufacturing. Here and in Murcia there are silk mills which use raw silk from

Figure 281. A view of Barcelona, showing the inner end of the harbor and one of the docks for ships. Barcelona has a large natural harbor which has been made deep enough for the largest ships, and passenger liners, as well as ocean freighters, come to its wharves. Prove by the map on pages 274–275 that the leading exports of Barcelona are chiefly "Mediterranean" products. How do you explain this fact?

places close by where some of the people make a business of growing mulberry trees and raising silkworms.

Barcelona. Leaving Valencia, we sail northeastward to Barcelona, the second largest city and the leading seaport of Spain. Find Barcelona on the map on pages 274–275 (*D2*). What does Figure 57 (p. 61) show about the density of population around Barcelona compared with the rest of Spain?

Barcelona is the center of the only important industrial district of Spain, and is the leading manufacturing city of the country. Coal for its mills and factories comes from the mines of northern Spain, and electricity from hydroelectric plants in the neighboring mountains provides additional power.

The leading manufactures of Barcelona are cotton, woolen, and linen goods. What does Barcelona import from the United States for its textile mills? The making of cotton goods is the most important manufacturing industry, not only at Barcelona but in Spain as a whole, and raw cotton is the most valuable import of the country. Most of it comes from the United States. *See Figures 281 and 282.*

The Ebro Valley. The map shows that the Ebro Valley is cut off from the coast by mountains. It is a dry, treeless region, but along the river wheat and other cereals are grown on irrigated lands. In many parts of the valley grapes and olives are grown without irrigation, and wines and olive oil are exported through Barcelona.

Courtesy of Saco-Lowell Shops

Figure 282. A cotton mill in the foothills of the Pyrenees, north of Barcelona. The machinery used in this mill was manufactured in our state of Massachusetts, and is run by hydroelectric power.

Across the Meseta to Madrid. The map on pages 192–193 will show you that from Barcelona or any of the other Spanish ports where we have stopped we can take a train to Madrid, the capital of Spain. No matter what port we start from, we must cross a long stretch of the bleak, dry Meseta, for Madrid is located almost exactly in the center of Spain. Most of the Meseta is a grassland with but few trees, cold and wind-swept in winter and hot and dusty in summer.

The southern part of the Meseta is so dry that the chief use of the land is for pasturing sheep and goats. In the spring many of the herdsmen take their animals into the mountains, where there is fresh green grass after the snow melts away. In this way the grass of the plateau is saved for winter pasturage. *See Figure 283.*

The northern part of the Meseta has a little more rain, and many of the people raise wheat and barley. Much more grain could be grown here if it were not for the fact that most of the farmers work in old-fashioned ways, harvesting the grain with sickles and scythes, and threshing it by trampling.

Spain's capital city. You would hardly expect to find a large city in the midst of the dry Meseta, yet Madrid is the largest city of Spain, with over three fourths of a million people. It began its growth long ago when a Spanish king made it the capital of the country because of its central location. When railroads were built, the capital was made the center of the Spanish railroad system, and that helped its growth still more.

Today Madrid is a busy, modern commercial center, with fine business buildings and streets crowded with traffic. To the visitor the strangest sights are the creaking oxcarts and the heavily loaded donkeys that are seen in the market centers of the city. They are reminders that almost within a stone's throw of the city many people are living and working much as their ancestors did long ago.

Madrid is a beautiful city, with many open squares, or *plazas*, planted with trees and flowers, and many beautiful buildings, among which is the marble palace where the king lives. It also has many institutions of learning and several museums which contain wonderful collections of pictures and other works of art. *See Figure 284.*

Spanish trade. You have already discovered that the leading exports of Spain are (1) "Mediterranean" products — wines, fruits and nuts, cork, and olive oil — and (2) ores and metals. Among the imports manufactured goods have the greatest total value, although raw cotton is the largest single import and the people buy considerable quantities of grain from other countries. These facts show

Photograph by Burton Holmes from Ewing Galloway

Figure 283. A Spanish shepherd tending his sheep on the Meseta. Why are many parts of the Meseta used for grazing rather than for raising crops?

that Spanish mills and factories do not supply the needs of the people, and that the farms do not provide all the grain that is needed.

Looking forward. For many years Spain has been called a backward country. The people have been slow to adopt modern methods of farming, mining, and other work, and as a result they have not made the best use of their resources. But conditions are changing now. Manufacturing is increasing each year, and better methods of farming and mining are coming into use. This progress gives us reason to think that in time Spain will be a much more prosperous country than it is today.

Naming ports. See if you can name each port described below:

1. The leading port of Europe in the export of iron ore.
2. A Portuguese port famous for its exports of wine.
3. Spain's copper-exporting port.
4. The leading port of Spain.
5. A Spanish port which exports large quantities of oranges.
6. The leading port of Portugal.

Giving reasons. Complete each of the following sentences by giving reasons for the fact which it states:

1. The coastal regions of Spain are more densely settled than the Meseta because _____.
2. Parts of the Meseta are better suited to grazing than to farming because _____.
3. Spanish and Portuguese farmers grow large quantities of grapes, olives, oranges, and other fruits because _____.
4. Northwestern Spain is the only part of the country where large quantities of corn are grown because _____.
5. Wheat is the leading grain crop of Spain and Portugal because _____.
6. Mining is important along the northern and southern margins of the Meseta because _____.
7. Large quantities of the ores and metals produced in Spain are exported because _____.
8. Barcelona has greater advantages for manufacturing than Madrid because _____.
9. Spain's iron-and-steel industry is located on the northern coast because _____.
10. Spain and Portugal import foodstuffs because _____.

Photograph by Ewing Galloway, N.Y.

Figure 284. One of the principal streets in Madrid, showing the crowded traffic. The trees at the left in the picture are on the border of one of the *plazas* of the city.

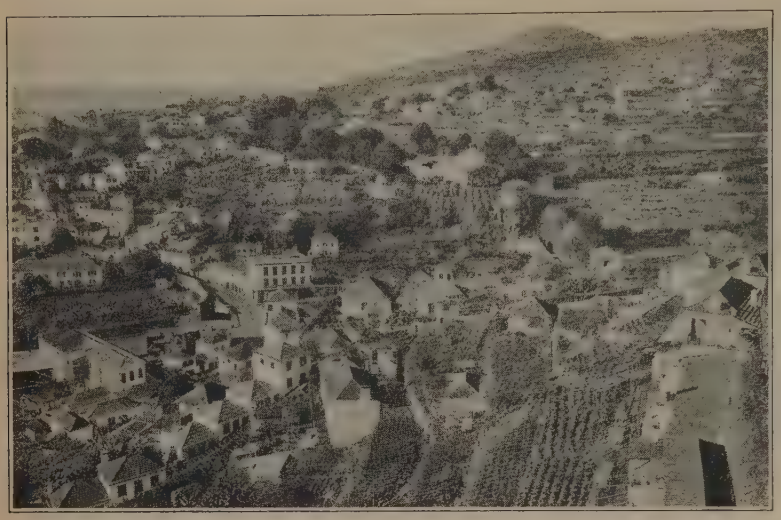

Figure 285. Part of Funchal, the capital and chief port of the Madeira Islands. Notice the terraced vineyards. The first grapevines were brought to the Madeiras by the Portuguese, who discovered the islands in 1419. How long ago was that?

2. Other Spanish and Portuguese Lands

On the map on page 282 find the lands outside the Iberian Peninsula which belong to Spain, and those which belong to Portugal. Judging from their location and extent, which country's possessions do you think are the more valuable?

Spanish and Portuguese islands. In the Mediterranean Sea are the Balearic Isles, which are part of Spain. They have fertile soils and the Mediterranean type of climate, and their chief products are fruits, wines, and olive oil.

Off the northwestern coast of Africa are the Canary Islands, which belong to Spain, and the Azores, the Madeira Islands, and the Cape Verde Islands, which belong to Portugal. The Canaries, the Azores, and the Madeiras all have a mild, moist climate, and the people raise fruits and early vegetables for European markets. The Cape Verde Islands are drier, and therefore they have fewer agricultural products for export.

The chief ports of all these groups of islands are coaling stations for ships and have cable stations for receiving and sending messages. *See Figure 285.*

Islands in the Gulf of Guinea. The Spanish and Portuguese also hold a number of small tropical islands in the Gulf of Guinea. Because of their hot, moist climate, these islands have many plantations where cacao and other tropical crops are grown. The Portuguese island of St. Thomas is especially noted for its large production of cacao, most of which is exported to Lisbon.

Spanish possessions on the mainland of Africa. The map on page 282 shows that Spain holds a very small portion of northern Morocco. Farther south on the coast of Africa is the Spanish colony of Rio de Oro. This colony has no commercial importance; for it is too dry for farming, and its mineral resources have not been developed.

On the coast of the Gulf of Guinea Spain holds the small area of Rio Muni, a hot, rainy, densely forested land. The native people, who are negroes, collect a few forest products such as rubber and palm kernels, which they sell to Spanish traders.

Portuguese Guinea. Find this little Portuguese colony on the map on page 98 (*B3*). The coastal lowland is forested, and the people there gather palm kernels and export palm oil. Farther inland there are grasslands, where the natives raise cattle which provide small quantities of hides for export.

Angola. Much farther south in Africa is the large Portuguese colony of Angola. From the map on page 96 and Figure 89 (p. 97) describe the surface and rainfall of Angola.

The dry coastal belt of Angola will remind you of the coastal desert of Peru, for farming is carried on only where water for irrigation can be obtained from streams, and the chief

crops of the irrigated lands are cotton and sugar cane. Irrigated farming, however, is much less important here than in Peru, and the exports of cotton and sugar are very small.

Of somewhat greater importance is the coffee which is grown on plantations farther east in the northern half of Angola, where the rainfall is greater. From these plantations coffee is exported to Portugal, but not in very large quantities.

Much of Angola is savanna, or tropical grassland, and because of this more of the natives are engaged in raising cattle than in any other kind of work.

Photograph from Ewing Galloway, N. Y.

Figure 286. Part of the water front and railroad yards at Lourenço Marques, the capital and chief seaport of Mozambique. This Portuguese port handles some of the trade of the Union of South Africa. What reason for this can you discover from the map on page 98?

Mozambique. The most valuable of the Portuguese possessions is Mozambique, on the eastern coast of Africa. Use the map on page 96 and Figure 89 (p. 97) to compare Mozambique and Angola in surface and rainfall. What reason can you suggest for the greater importance of Mozambique?

Mozambique has plentiful rainfall for farming, because the southeast trade winds bring rain to it from the Indian Ocean. The climate is warm as well as moist, and on the coastal lowland the Portuguese have established plantations of sugar cane, cotton, coconuts, and other tropical products. As yet, however, they have not done so much to develop plantation agriculture as the British have farther north, and the exports of tropical products are small. The leading export is sugar, much of which goes to Portugal. *See Figure 286.*

The interior of Mozambique is part of the grassy plateau region of East Africa. It is known to have coal and other mineral wealth, but as yet very little mining is carried on.

In Mozambique the Portuguese have a colony which could be made much more valuable than it is today. But in their possessions, as in the home country, the Portuguese have been much slower to develop the resources than have the British and the French.

Portuguese possessions in Asia. On the west coast of India the Portuguese have three tiny possessions, and in China they hold the island and city of Macao near the British island of Hong Kong. These possessions are trading centers, and with the eastern half of the little island of Timor in the East Indies are the only Portuguese lands in Asia. What country owns the western half of Timor?

Can you answer these questions?

1. Why are the possessions of Spain less valuable than those of Portugal?
2. Which possession of Portugal is the most valuable, and why?
3. Why does Portugal export cacao to other countries of Europe?
4. What reasons can you give for the fact that the Spanish and Portuguese discovered the small islands off the northwest coast of Africa?
5. In what countries of the Americas do the people speak Spanish, and why?
6. In what country of the Americas do the people speak Portuguese, and why?

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Testing yourself. Test your knowledge of the Iberian Peninsula by giving the right name to match each phrase below:

1. The plateau shared by Spain and Portugal.
2. The river at the mouth of which Oporto is located.
3. The mountains which separate Spain from France.
4. The river on which Seville is located.
5. The highest of the mountain ranges of southern Spain.
6. The river at the mouth of which Lisbon is located.
7. An important river valley in the northern part of Spain.

Some things to explain. Explain why

1. Madrid was chosen as the capital of Spain.
2. Madrid is the largest city of Spain today.
3. Barcelona imports large quantities of raw cotton from the United States.
4. The dry lowlands of Murcia and Valencia are "garden spots" of Spain.
5. Silk-manufacturing is important in Murcia and Valencia.
6. More land is used for crops in the northern part of the Meseta than in the southern part.
7. Seville and Lisbon have many cork factories.

Map work. Color the possessions of Spain and the possessions of Portugal on the map of Africa which you are making.

By Burton Holmes from Ewing Galloway, N. Y.

Figure 287. Italian farmers harvesting wheat in the Plain of the Po. Notice how level the land is in this region of Italy. The trees that you see in the picture are mulberry trees. What do they suggest about the work of some of the people in the plain? In what valley lowland of France did you see mulberry trees?

III. ITALY AND ITS POSSESSIONS

Foreword. Italy is by far the most important country of southern Europe today. It is much more densely populated than the others, and it carries on far more foreign trade. Do you know why? See how many reasons for Italy's importance you can discover as you study this chapter.

1. Northern Italy

The map on pages 274–275 shows that Italy may be divided into two sections: the northern, or continental, part, and the southern, or peninsular, part. What mountains form the northern margin of Italy? What plain lies between those mountains and the Apennines?

The Plain of the Po is one of the most thickly settled regions of Europe, and within it live two fifths of all the people of Italy. What reasons can you suggest for the great density of population in this plain?

A river-made plain. Long, long ago what is now the Plain of the Po was a great arm of the Adriatic Sea. Year after year the rivers from the bordering mountains washed mud and sand into it until at last it was filled with these fine rock materials and became dry land. The delta at the mouth of the Po shows that even now the plain is being extended into the Adriatic Sea.

In places the surface of the plain is remarkably level, and the river-laid soils are fine, deep, and fertile. The summer weather is hot, and the growing season is long, but snow sometimes falls in the winter. The plain is beyond the limits of the Mediterranean climate, and has rain in the summer.

A great farming region. As you might expect from its surface, soils, and climate, the Plain of the Po is a great farming region. It

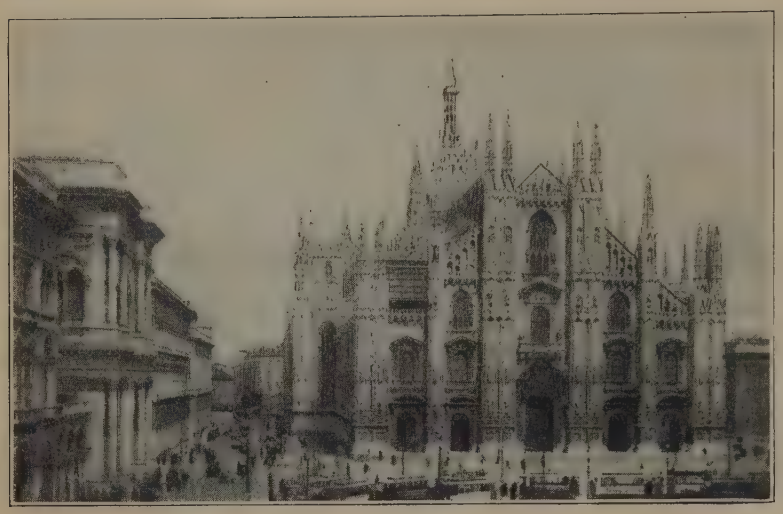

Figure 288. The cathedral in Milan. Because of its location in the Plain of the Po, Milan has been an important city for hundreds of years. The building of the cathedral was begun in 1386.

is one of the leading wheat-growing regions of Europe, one of the few important corn-growing regions, and the only important rice-growing region of the continent. All three of these crops provide large quantities of food for the Italian people, but even so, the country is so densely populated that much wheat and some corn are imported.

Most of the farmers of the plain use farming machinery and do much of their work in modern ways. Many irrigate their fields so that their crops get exactly the right amount of moisture, and some get as many as three or four crops a year from the same land. *See Figure 287.*

On the northern and southern margins of the plain much of the land is used to pasture cattle, and in the south, especially, dairying is very important. Among the products of the dairying industry are Gorgonzola and Parmesan cheeses, for which Italy is famous and which are exported in large quantities.

Mulberry trees and silk. Along the western and northern margins of the plain the climate is mild enough for mulberry trees, and many of the people raise silkworms. The cocoons are sent to factories, where the fibers are "reeled" by machinery. Reeling means unwinding the delicate fibers from the cocoons and twisting them together to make the strands of raw silk.

A great manufacturing region. Besides being a rich farming region, the Plain of the Po is one of the leading manufacturing regions of Europe. It has no coal or iron ore,— in fact, all Italy is poor in these mineral resources,— but the large population provides abundant labor, or workers, for factories, and the location of the plain makes it easy for the manufacturers to market goods in all parts of Europe. The lack of coal is partly made up for by electric power from hydroelectric plants on the swift-flowing streams from the Alps, but large quantities of coal are imported, chiefly from Great Britain.

Textile-manufacturing. In all the larger cities of the plain there are textile mills, and textile-manufacturing is the leading industry. This work began long ago with the manufacture of silk goods from raw silk produced in the plain, but today there are large numbers of cotton mills and woolen mills as well as silk mills. The newest kind of textile-manufacturing is the making of goods of rayon, or artificial silk. In this work, as in the making of real silk goods, Italy holds high rank among the countries of the world.

The leading textile centers are the two largest cities of the plain, Milan (Milano) and Turin (Torino). Find these cities on the map on pages 188–189 (*L6* and *K6*). Notice how conveniently they are located to obtain supplies of raw materials and to market manufactured goods through the port of Genoa. To this port come large quantities of cotton, chiefly from the United States, and much wool from South America and Australia.

Figure 289. Bellagio, a town on the shore of Lake Como in the Italian Alps. The blue water, the green wooded hills, and the snow-capped mountains make this one of the beauty spots of Europe.

Other kinds of manufacturing. Although textiles are the most important manufactured products of the plain, many other kinds of manufacturing are carried on. Large quantities of iron and steel are imported and used in the manufacture of many different products. For example, Milan makes locomotives and many kinds of machinery, and Turin turns out large numbers of steel railroad cars and of automobiles. Still other important manufactures are chemicals and glass.

The growth of cities in the plain. The largest cities of the Plain of the Po are Milan, with nearly a million people, and Turin, with more than half a million. Turn to the map on pages 192–193 and notice that both these cities (*G6*) are on railroad lines which pass through tunnels in the Alps, connecting northwestern Europe with the Mediterranean. Milan has become the larger city chiefly because it is the place where two of these north-south railroad lines meet and cross the main east-west railroad line through the Plain of the Po. *See Figure 288.*

In this plain, as in all industrial regions, manufacturing has greatly increased the population and the demand for foodstuffs in the cities, providing work for more farmers in the country districts. An increasing farm population, in turn, means larger home markets for manufactured goods. Thus manufacturing and farming have grown together, each helping the other.

The Alpine region. From the Plain of the Po the Alps rise on the west and the north, reaching heights of over 15,000 feet in the peaks of Mont Blanc and Monte Rosa. Find these peaks on the map on pages 188–189 (*K6*). Find also Lake Como, Lake Maggiore, and Lake Garda, farther east. The district of the Italian lakes is one of the most beautiful parts of Europe, and thousands of tourists from all over the world visit it each year. *See Figure 289.*

In the valleys among the Italian Alps and on the sunny hillsides along the northern margin of the plain the people raise grapes and olives and make wine and olive oil. Many of the vineyards and olive groves are on terraces on the mountain slopes. *See Figure 290.*

By Burton Holmes from Ewing Galloway, N. Y.

Figure 290. Terraced vineyards on a mountain slope in the Italian Alps. The south-facing slopes of the Alps are warm and sunny most of the year.

Figure 291. The Grand Canal in Venice. In the distance is one of the churches, and at the left is an old Italian palace. The posts in front of the palace are for tying gondolas.

Figure 292. One of the smaller canals, or "water streets," in Venice, bordered by houses and shops.

On the higher slopes of the Alps the people make their living mostly by keeping cows and goats, just as so many do in neighboring parts of Switzerland and Austria.

Adriatic ports. At the northern end of the Adriatic Sea Italy has three seaports: Venice (Venezia), Trieste, and Fiume. Find these cities on the map on pages 188–189 (*N-06*). Before the World War Trieste and Fiume were ports of Austria-Hungary; but now that the lands of Austria-Hungary have been divided among several other countries, Trieste and Fiume have lost much of their trade.

Venice (Venezia). There is no other city in the world quite like Venice. It is built on a large number of small islands in a shallow lagoon, or bay, just north of the delta of the Po. One railroad, passing over a long bridge, connects the city with the mainland.

Most of the islands are too small to have many streets, and the canals, or waterways, between them are the main highways of the city. Most of the houses face the canals, and many of them rise directly from the water. Hundreds of bridges connect the various islands, but the principal means of transportation in the city are long, narrow boats called *gondolas*. *See Figures 291 and 292.*

Long ago, before the route to the Orient around the southern tip of Africa was discovered, Venice was a great commercial port, serving as a gateway for trade between Europe and eastern Asia. Venetian merchants sent their ships to the eastern end of the Mediterranean, loaded with European goods to be exchanged for those which came overland by camel caravan from India and the Far East. This "carrying trade" brought wealth and power to Venice, and the people built beautiful palaces and public buildings, many of which are standing today.

Venice is now a much less important port than it once was, for much of the trade of Europe with the Orient is carried on by ships which sail directly from northern ports through the Mediterranean and the Suez Canal to India and the Far East. It is, however, an important Italian port, serving as the eastern gateway for the Plain of the Po. From the map (pp. 188–189) name its leading exports.

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Figure 293. Part of the water front at Genoa, showing ocean freighters from many different countries. Genoa, in Italy, and Marseille, in France, have much the same advantages for carrying on trade with the Americas and with the Far East, and they are the two most important ports on the Mediterranean Sea.

Venice is so beautiful and so interesting that thousands of tourists visit it each year. Perhaps you can find a book which tells about the fine old palaces, the art museums, and the beautiful churches there.

Genoa (Genova). In the days when Venice was a great commercial port, Genoa was its only rival. Today Genoa has outstripped Venice in trade and population and is the leading seaport of Italy. Find Genoa on the map on pages 188–189 (*L6*) and see if you can discover any reasons for its growth.

Because of its location, Genoa serves as the ocean gateway for the western part of the Plain of the Po — the part where Milan and Turin are located and manufacturing has developed to the greatest extent. For this reason it imports more of the raw materials, fuels, and foodstuffs needed in the Plain of the Po than does Venice, and exports more of the manufactured products. *See Figure 293.*

Another reason why Genoa is a more important port than Venice is that its location is such that it handles much of the foreign trade of Switzerland. Use the map on pages 192–193 to show why this is so.

As you would expect, Genoa is also a busy industrial city, with cotton mills, shipbuilding yards, and many other manufacturing plants. Like Marseille, it imports large quantities of oil-seeds which are used for making vegetable oils and soap.

The Riviera. Extending westward from Genoa is the warm, sunny Riviera coast which Italy shares with France, and which attracts such large numbers of winter visitors. What do the people of this region do for a living besides caring for the needs of visitors?

An export and import test. From the maps on pages 188–189 and 274–275 make a list of the exports of Genoa and another of the imports. Then answer the following questions:

1. Among the imports, what two are for use in the textile mills of northern Italy? 2. What two suggest that Italy is poor in fuel resources? 3. What one proves that Italy needs more grain than the farmers produce?

4. Among the exports, which ones prove that Italy produces a surplus of certain foodstuffs? 5. Which ones suggest Italy's importance as a manufacturing country? 6. What raw material for textile-manufacturing does Italy produce in sufficient quantities to supply the home needs and provide a surplus for export?

By Burton Holmes from Ewing Galloway, N. Y.

Figure 294. An Italian shepherd driving his sheep and goats to pasture in the Apennines. The sheep of the Italian peninsula help to supply wool for manufacturing, and the goats help to provide the people with milk. Why are there more sheep than cattle in Italy?

2. The Italian Peninsula and Sicily

From the map on pages 274–275 describe the surface of the Italian Peninsula and Sicily. What does Figure 271 (p. 267) tell about their climate? How do you think the work of the people in the "Mediterranean" lands of Italy differs from work in the Plain of the Po? As you study this section, find out whether or not your answer is correct.

Farm lands and pasture lands. Although the Italian Peninsula and Sicily are largely mountainous, more of the people are engaged in farming than in any other kind of work. The farms are small, and many of the farmers are very poor; but altogether they produce large quantities of wheat, vegetables, and the usual "Mediterranean" fruits.

Much of the wheat grown in this part of Italy is especially well suited to the manufacture of macaroni, which is one of the principal foods of the Italian people. In Naples and other cities there are factories where macaroni is made for home use and for export.

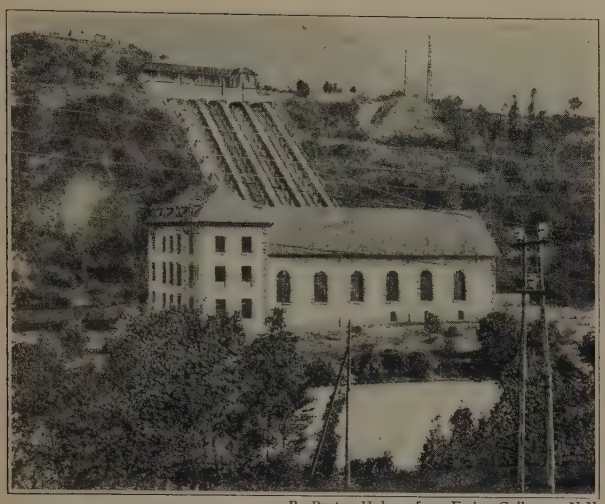
On the map on pages 274–275 find the places where Italian farmers raise large quantities of citrus fruits. Lemons from Sicily and oranges from the "toe" of Italy are among the important exports of the country, going chiefly to markets in northern Europe.

Nearly every farmer of southern Italy has a small vineyard and makes wine for family use, and many have olive groves and press their own olive oil. In certain places fine qualities of olive oil are made on a larger scale for export. The rougher lands and those with the poorer soils are used largely for pasturing sheep and goats. *See Figure 294.*

Mineral products and water power. In the northern part of the Apennines are the famous marble quarries of Carrara. Carrara marble is pure white and very fine, and it is shipped to many distant lands. A little farther south there are mercury mines. These, with others north of Trieste, make Italy the rival of Spain in the production and export of mercury.

Lignite is mined in the Apennines for household fuel, but little use is made of it for manufacturing. Instead, the Italians are developing the water power of the Apennines. A number of hydroelectric plants have been built, and more are planned. Power from these plants has led to an increase in manufacturing in the Italian Peninsula, but far less manufacturing is carried on here than in the northern plain. *See Figure 295.*

The greatest handicap to manufacturing in Italy is the lack of coal and metal ores. Iron ore is mined in a few places, but the richest mines, in the little island of Elba, are giving out. In time the Italians hope to make up largely for the lack of coal by greater use of hydroelectric power, but for iron, copper, and other metals they will probably always have to depend chiefly on imports.



By Burton Holmes from Ewing Galloway, N.Y.

Figure 295. A hydroelectric plant in Italy. In the Alps and in the Apennines the Italians are harnessing the rivers to provide power for manufacturing.

Florence (Firenze) and the Arno Valley. Almost every visitor to Italy goes to Florence, for this old city has some of the most wonderful art galleries in the world. Find Florence on the map on pages 188–189 (*M7*), and notice its location on the Arno River. The valley of the Arno is not large, but it is one of the richest farming regions in the Italian Peninsula. Its people have always been prosperous, and that is one reason why Florence long ago became a center of art and learning. *See Figure 296.*

Rome (Roma). On the map on pages 274–275 find Rome, the capital of Italy (*F2*). Notice its location on the Tiber River, about halfway between the northern and southern ends of the Italian Peninsula. From this central location the Romans of long ago conquered all Italy and then extended their power, little by little, until they controlled all the Mediterranean borderlands.

For more than two thousand years Rome has been one of the most famous cities of the world, first as the capital of the Roman Empire, and later as the headquarters of the Roman Catholic Church. For many hundreds of years it has been the home of the Roman Catholic Popes.

Rome is built on a group of low hills bordering the Tiber, and on the margin of a small coastal plain. In the days of the Roman Empire the plain was thickly settled by farmers who helped to provide the great city with food. In the course of many centuries it became marshy and unhealthful, and for a long time it was almost deserted. Now the Italians are draining it and cultivating it again.

Rome is the third largest city of Italy, but it has not yet become a manufacturing center. Its people are engaged in many kinds of work connected with business and government, and with the entertainment of the thousands of visitors who come to the city each year. One may spend weeks visiting the beautiful churches of Rome and the ruins of buildings which go back to the old Roman times, and still not see all that this Italian city offers of religious and historic interest.

Figure 296. The Ponte Vecchio, or "Old Bridge," in Florence. The bridge is lined with little shops, and forms part of a passageway connecting two famous art galleries on opposite sides of the Arno.

Figure 297. An airplane view of the Vatican City, in Rome. The large domed building is St. Peter's Church, and beyond it, at the left, is the Vatican. Both buildings contain many wonderful works of art. The tall column in the open *piazza* in front of St. Peter's was brought to Rome from Egypt about 1900 years ago.

The Vatican City. Within the boundaries of Rome is the small independent Vatican City, which the Italian government in 1929 placed entirely under the control of the Roman Catholic Church. Within this city is St. Peter's Church and the palace of the Vatican, which is the home of the Pope. *See Figure 297.*

A famous volcano. Many visitors to Europe get their first glimpse of Italy as their ship steams into the beautiful Bay of Naples. Long before the ship moves into one of the docks that line the water front, the passengers are on deck with field glasses, looking at Vesuvius, the great volcanic mountain a few miles east of Naples. Usually there is a cloud above the mountain, for Vesuvius is an active volcano. The cloud is due to the water vapor which rises in the throat of the volcano, passes into the air, and is cooled.

At times the hot liquid lava in the crater of Vesuvius rises and overflows the rim. As it creeps down the mountain slope it spreads over fields, highways, and even villages, and sometimes the people have to flee for their lives. For centuries Vesuvius has been more or less active, and at times it has caused much damage. In the year 79 a great eruption from this volcano buried the cities of Pompeii and Herculaneum at its base in a huge shower of hot mud and ashes. For a long, long time these cities were almost forgotten. Now they have been excavated, or uncovered, and the streets and houses tell much of the life and work of the Romans of long ago.

Naples (Napoli). Locate Naples on the map on pages 274–275 (*F 2*). We shall find this seaport of southern Italy a busy, crowded city, surrounded by farm lands where the people

raise the usual Mediterranean crops. It is the largest city of Italy in population, and it handles much of the foreign trade of the southern part of the country. It is not so important a port as Genoa, however. Can you explain why?

In recent years Naples has become an important industrial city. The growth of manufacturing has been due in large measure to the development of hydroelectric power in neighboring parts of the Apennines, and Naples now has textile mills, sugar refineries, shops for making engines for motor cars, and other manufacturing plants. *See Figure 298.*

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Figure 298. The harbor of Naples, with Mount Vesuvius in the background. Notice the cloud of steam rising from this famous volcano. Can you find an ocean liner and some factories in the picture?

Sicily. The map shows that Sicily is separated from the "toe" of Italy only by the very narrow Strait of Messina. In the crust of the earth beneath this strait there are deep fissures, or cracks, and along these cracks movements of the crust which result in earthquakes frequently take place.

On the map on pages 274–275 find Mount Etna in Sicily (*F3*), and give its height. This great mountain peak is a volcano, and, like Vesuvius, is active from time to time. Near the base of Mount Etna there are valuable sulphur deposits, and the mining and preparation of sulphur for export provides work for many people. *See Figure 299.*

Figure 57 on page 61 shows that Sicily is crowded with people. Most of them are farmers, and, as you would expect, their principal crops are wheat and Mediterranean fruits. Palermo, the largest city, exports large quantities of Sicilian lemons.

Sardinia. Turn to the map on pages 274–275 and find the island of Sardinia, which belongs to Italy (*E2–3*). Like its neighbor, Corsica, Sardinia is a mountainous island with the Mediterranean type of climate, and most of the people are farmers. Sardinia has considerable mineral wealth, but the roads are so poor that only a few mines have been opened. From the map on pages 274–275 name the chief mineral products of the island.

Italy's trade. Italy is the only Mediterranean country where manufacturing is important enough to require large imports of cotton, wool, iron, and other raw materials. Lack of fuel resources makes necessary large imports of coal and mineral oils, and the dense population requires more wheat and corn than are produced in the country.

In return for these and other imports, Italy has a variety of products for export. First come its surplus manufactures, especially cotton, silk, and rayon goods; next, its surplus farm products, chiefly fruits and nuts, vegetables, rice, and cheese; then its surplus raw silk; and finally, its surplus mineral products — marble, sulphur, and mercury.

With such a large and varied trade, it is natural that Italy should buy and sell in many parts of the world. From our own country Italy buys large quantities of cotton, wheat,

Photograph by Ewing Galloway, N.Y.

Figure 299. A sulphur mine in Sicily. The sulphur is mined about 700 feet beneath the ground, and is hoisted to the surface by machinery run by electricity.

mineral oils, and metals, and in return we buy many Italian products, especially cheese and fruits. Other countries which have a large share in Italian trade are Germany, France, Great Britain, and Switzerland.

Some points to remember. In summing up the points which help to explain why Italy has become such an important country we should remember

1. The northern plain, with its advantages for farming and manufacturing.
2. The Mediterranean climate of Sicily and most of the Italian Peninsula, which makes it possible for the people to carry on farming the year round.
3. The water power, which makes up in part for the lack of coal.
4. The dense population, which provides abundant labor for all kinds of work and large home markets for manufactures.
5. The central location of Italy in the Mediterranean Basin, making it easy for the people to trade with all parts of the world.

We cannot, however, explain Italy's development by these facts alone, for the country has several serious handicaps, the greatest of which is its lack of coal and its small resources of iron ore. We have seen that the Italian people have been quick to make good use of the resources which they have, and to find ways to overcome their handicaps. This, perhaps more than anything else, is why Italy is one of the leading countries of Europe.

3. The Italian Possessions

On the map on page 282 find the group of islands in the Ægean Sea which belong to Italy. Find also the three Italian colonies in Africa. Locate these colonies on Figure 89 on page 97 and describe their rainfall. What does that suggest about their value to Italy?

The Dodecanese Islands. Although these islands in the Ægean Sea belong to Italy, the people are Greeks. Most of them are farmers, and they raise unusually fine grapes and vegetables for export, chiefly to Egypt.

Eritrea and Italian Somaliland. As you discovered from the map, Eritrea and Italian Somaliland are very dry lands, and for this reason they are of little commercial value. Most of the people are nomadic herdsmen who wander about with their cattle, sheep, camels, and goats.

Libya. The largest of Italy's colonies is Libya, directly across the Mediterranean Sea from the homeland. The interior of this colony is part of the Sahara Desert, but along the coast there is a little more rainfall, and the people raise Mediterranean fruits and barley. In the waters off the Libyan shores large numbers of sponges are gathered for export.

In the Libyan desert are some of the richest oases of northern Africa, where dates of especially fine quality are grown. Camel caravans carry the dates to the seaport of Tripoli for export. Tripoli is a starting point for a number of different caravan routes which cross the Sahara Desert to Timbuktu and several other towns of the Sudan.

Map work. Color the possessions of Italy on the map of Africa which you are making.

Making choices. Choose the ending which makes each sentence below correct:

1. Rome, the capital of Italy, is located on the

Po River. Arno River. Tiber River.

2. The leading seaport of Italy is

Genoa. Naples. Venice.

3. The city of Italy which is located on islands and has "water streets" is

Florence. Venice. Milan.

4. The largest manufacturing city of the Plain of the Po is

Milan. Turin. Palermo.

5. The Vatican City is in

Venice. Rome. Florence.

6. The famous mountain near Naples is

Mt. Etna. Mt. Vesuvius. Mont Blanc.

7. Italy shares the Riviera coast with

Yugoslavia. Switzerland. France.

8. The two large islands in the Mediterranean which are parts of Italy are

Corsica and Sardinia. Sardinia and Sicily. Sicily and Crete.

9. Most of the Italian possessions are in

Africa. South America. Asia.

Sentences to complete. Complete the following sentences by giving reasons:

1. The Plain of the Po is one of the best farming regions in Europe because _____.

2. This plain is one of the few important corn-growing regions of Europe because _____.

3. The farms are smaller and the farmers poorer in peninsular Italy than in the northern plain because _____.

4. Peninsular Italy and Sicily are the parts of the country where most of the "Mediterranean" crops are grown because _____.

5. Grapes and olives can be grown on the south-facing slopes of the Alps in northern Italy because _____.

6. Far more cattle are raised in the Plain of the Po than in peninsular Italy because _____.

7. Sheep and goats are the kinds of live stock raised in largest numbers in peninsular Italy because _____.

8. The Plain of the Po is one of the important industrial districts of Europe because _____.

9. Textile-manufacturing made an early start there because _____.

10. The growth of manufacturing in the Plain of the Po has increased the prosperity of the farmers because _____.

Something to discuss. It is rather unusual for countries which are poor in coal and iron ore to carry on manufacturing on a large scale. Italy and Switzerland are exceptions to this rule. Discuss with your classmates the reasons why these two countries have so many important manufacturing industries. In this discussion you will find it helpful to answer the following questions:

1. What advantages have Italy and Switzerland for obtaining raw materials and marketing manufactured goods?

2. Why are both countries well supplied with labor for manufacturing?

3. How do they both make up in part for their lack of coal?

A possessions test. 1. Name each of the Italian possessions described below:

a. The Italian islands in the Ægean Sea.

b. The Italian colony in Africa most of which is in the Sahara Desert.

c. The Italian colony on the Red Sea.

d. The Italian colony bordering the Indian Ocean.

2. Explain why the African possessions of Italy are less valuable than those of Great Britain and France.

Special credit work. 1. Try to find a book which tells about the destruction of Pompeii, or about the ruins of this old Roman city as they look today. Report to your class on one of these subjects.

2. Find out all you can about rayon — what it is made of and how it is used — and report to your class.

Photograph by Ewing Galloway, N.Y.

Figure 300. Greek farmers harvesting wheat. They are using scythes fitted with old-fashioned "cradles," by means of which they can lift the grain as they cut it and drop it in piles on the ground.

Figure 301. A Greek shepherd tending his sheep. The sheep are grazing on land in northern Greece which, although it is level enough for farming, has such stony soil that it cannot be used for crops.

IV. THE BALKAN COUNTRIES

1. Foreword

A bridge land. The map on pages 54–55 shows that the Balkan Peninsula forms a bridge between Europe and southwestern Asia. Across this bridge people have passed back and forth for many centuries. As you know, the first civilized people in the Balkan Peninsula were the Greeks, who occupied the southernmost part. Later other peoples moved into the peninsula from the northeast.

Because the Balkan Peninsula is so mountainous, no one group of people has succeeded in keeping control of it, and so it has come to be divided among several different countries. The people of each country speak a language of their own, and even within some of the countries themselves there are differences of language which make it hard for the people of one section to understand those of another.

You already know that the six countries which lie partly or wholly in the Balkan Peninsula are Greece, Albania, Yugoslavia, Rumania, Bulgaria, and Turkey. Locate these countries again on the map on pages 274–275. Which ones border the Mediterranean Sea? the Black Sea? Which one occupies the peninsula of Anatolia, with only a small part of its area in the Balkan Peninsula?

Hindrances to development. All of these countries are rather poorly developed. One reason is that for many years they suffered from wars and weak governments. Another is that much of the land is so mountainous that few railroads have been built and most of the roads are poor. Without modern means of transportation it is almost impossible for any people to make good use of their resources.

Most of the people of the Balkan Peninsula and Anatolia are farmers or herdsmen. Large numbers of the farmers do their work in the simple ways of long ago, and many have never even seen modern farming machinery. Some of the herdsmen wander about with their flocks and herds, living a half-nomadic life.

Albania. The smallest of the Balkan countries is Albania, a land of rugged mountains with few good roads, only one short railroad,

and little foreign trade. Along the coast there is a lowland where the people carry on farming of the Mediterranean type. Tirana, the capital city, is located on the inner margin of this coastal lowland. The people of the interior of the country are mountaineers who make their living chiefly by raising cattle and sheep.

European interest in the Balkans. Although the Balkan countries are poorly developed, they are of great interest to the larger and stronger countries farther northwest in Europe. As you study this chapter, find reasons for this interest.

2. Greece

Turn to the map on pages 274–275 and explain why Greece is sometimes called "a peninsula of peninsulas." The long, irregular coast line, with its many gulfs and bays, long ago led the Greeks to make use of the sea. Today, as in olden times, many of the Greeks are sailors and many are merchants, and Greek ships carry on much of the trade between the countries bordering the Black Sea and the eastern part of the Mediterranean.

The map shows that Crete and most of the small islands in the Ægean Sea belong to Greece, as do Corfu and the Ionian Islands off the west coast of the country. What can you say about the surface of these islands?

From the products and exports of Greece, what can you tell about the use of the land? about the climate?

Mediterranean climate and products. Figure 271 (p. 267) shows that nearly all of Greece has the Mediterranean climate. The land is hilly and mountainous, but in the sunny valleys the people raise Mediterranean fruits and winter wheat and barley. *See Figure 300.*

Along the Gulf of Corinth and the west coast of Greece the farmers grow a special variety of small, black, seedless grapes which are dried in the sun and called currants. Large quantities of currants are shipped to distant lands from the seaport of Patras, and they hold second place among the exports of Greece. Raisins, figs, wines, olives, and olive oil are also exported.

Although many Greek farmers raise wheat, the total production falls far short of the needs of the country, and wheat and flour are the leading imports.

An important export crop. In the part of Greece bordering the northern end of the Ægean Sea there are several fertile lowlands where, in addition to grain and fruit, large quantities of tobacco are grown. Tobacco is by far the most valuable export of Greece, and it is shipped to many other countries for use in making cigarettes.

Sheep and goats. Large numbers of sheep and goats are pastured among the mountains of Greece, for these animals can graze on slopes that are too steep and rocky for farming, and on lands where the soils are too poor and stony for crops. They provide the people with milk, cheese, and wool, and with considerable quantities of skins for export. *See Figure 301.*

Mining and manufacturing. Metal ores have been discovered in various parts of Greece, but mining has developed slowly. That is partly because there are not many railroads, and partly because Greece has no coal for smelting metal ores. At present the most valuable mineral product is lead. Find the lead mines on the map on pages 274–275 (*H3*).

The lack of coal has also hindered the growth of manufacturing in Greece. The only industries of any importance are those which use raw materials produced in the country. Among these industries are flour-milling and the making of olive oil, cigarettes, woolen cloth, and woolen carpets. Since manufacturing is so little developed, manufactured goods are among the leading imports of Greece.

Photograph by Ewing Galloway, N. Y.

Figure 302. The busy harbor of Piræus. Because of its importance as a port, Piræus has yards where ships are built and repaired, and engineering plants where ships' engines are manufactured.

Athens (Athenai) and its seaport. On the map on pages 274–275 find Athens, the capital and largest city of Greece, and its seaport of Piræus (*H3*). Today, as in ancient times, Piræus is the chief port of Greece and the gateway to Athens, the city which was once the greatest center of art and learning in the world. Thousands of tourists from all parts of the world pass through Piræus every year on their way to Athens. *See Figure 302.*

Piræus and Athens are only about five miles apart, and the trip from the port to the capital can be made quickly by railroad or automobile. Visitors watch eagerly for their first glimpse of the Acropolis, a rocky, flat-topped hill on which are the ruins of some of the most beautiful temples ever built anywhere in the world.

The ancient city of Athens clustered closely round the base of the Acropolis, and here, as on the hill, are the ruins of some very old buildings. Some distance from the Acropolis is the stadium where the Greeks of long ago held their athletic games and matches. The stadium has been rebuilt, and every few years athletes from many different countries gather there to take part in contests which are known as the Olympic Games. *See Figure 303.*

Surrounding the old city is the Neapolis, as the Greeks call the newer part of Athens. Here the streets are wide, and the buildings are much like those in other European capitals. In this part of the city is the National Museum, which is a treasure house of statues and other objects of art made by the Greeks of long ago.

Hundreds of students from western Europe and America go to Athens to spend a year or two studying the art and architecture of the ancient Greeks, or reading Greek plays and

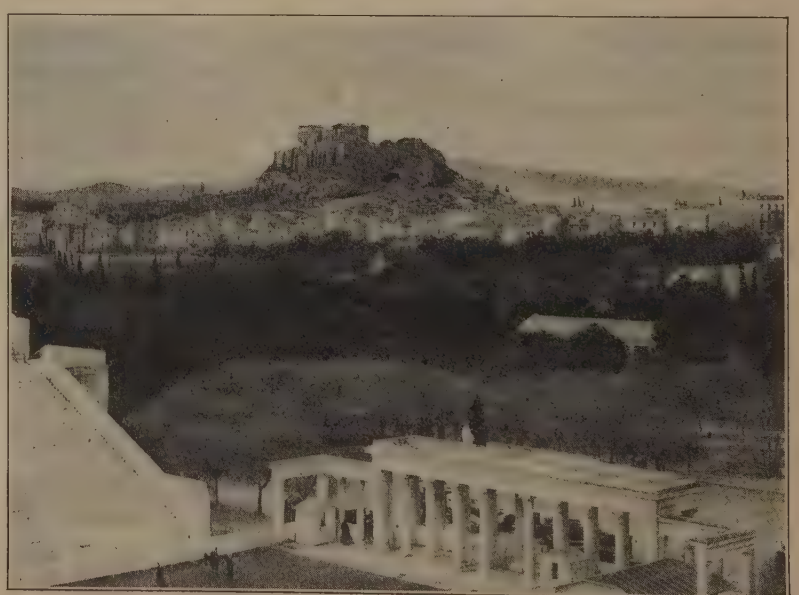

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Figure 303. A view of the Acropolis as it looks from the top of the stadium. The most famous of the ruined temples on the Acropolis is the Parthenon. Have you ever seen a picture of it?

poetry in the surroundings in which they were written, many centuries ago.

Salonika — a gateway city. Turn to the map on pages 192–193 and find the Greek port of Salonika (*K7*). Notice that it is the southern terminus, or end, of a railroad from Berlin and Vienna. This railroad is the chief route of travel and transportation between central Europe and the eastern part of the Mediterranean Sea. Because of this, Salonika is a gateway city, where ships from eastern Mediterranean ports and from Asiatic ports meet trains from central Europe and an exchange of goods takes place. Thus its importance as a port is much greater than if it served only the country in which it is located.

Photograph by Ewing Galloway, N.Y.

Figure 304. Threshing wheat in Rumania. The plains of Rumania and northern Yugoslavia are the only parts of the Balkan countries where many of the farmers are prosperous enough to have farming machinery. What reason can you suggest for this fact?

The Greek islands. Crete and the smaller islands which belong to Greece are mountainous, but most of the people are farmers who raise grain and Mediterranean fruits and keep sheep and goats. The islands off the west coast of Greece share the currant industry with the neighboring mainland, and Corfu is noted for the fine quality of its olives.

Sentences to complete. Sum up what you have learned about Greece by completing the following sentences:

1. Sundried fruits are important products of Greece because _____.
2. The leading export of Greece is _____.
3. There are large numbers of sheep and goats in Greece because _____.
4. Mining and manufacturing have developed slowly in Greece because _____ _____.
5. Thousands of people from all parts of the world visit Athens because _____.
6. Salonika is an important seaport because _____.

3. Yugoslavia and Rumania

The map on pages 274–275 shows that Yugoslavia and Rumania are the largest of the Balkan countries and extend the farthest north. Which of these countries borders the Adriatic Sea? the Black Sea? In which one of them is the mouth of the Danube River?

If we study the foreign trade of these countries, we shall find that they both export corn, wheat, live cattle and pigs, and meat. What explanation for these exports can you discover from the map on pages 274–275? from Figure 271 on page 267? Before you read further, study Figure 304.

Some rich farm lands. The regional map shows that Yugoslavia and Rumania both have a share in the rich Plain of Hungary, and that Rumania has within its borders the greater part of the plain of the lower Danube. Figure 271 (p. 267) shows that these lowland regions are outside the limits of the Mediterranean climate. What did you learn about their rainfall on page 268?

These plains, with their hot, moist summers and their cold winters, will remind you of our own Central Plains, for the farmers grow large quantities of corn and winter wheat and raise

Figure 305. A group of shepherds near Sarajevo, in the part of Yugoslavia known as Bosnia. Notice how they are dressed. Bosnia is one of the mountainous parts of Yugoslavia, where many of the people still follow the customs of their forefathers.

large numbers of cattle and pigs. They also raise other grain crops, and in certain sections tobacco, sugar beets, and grapes and other fruits. Plums are a special crop in northern Yugoslavia, and large quantities of them are sundried to make prunes.

Rumania has other rich farm lands in the Plateau of Transylvania and in the regions east of the Carpathians. Because it has much more land well suited to farming than Yugoslavia has, its exports of grain are greater. The exports of foodstuffs from both countries go chiefly to the densely populated industrial countries farther northwest.

Work among the mountains of Yugoslavia. Among the mountains which make up the greater part of Yugoslavia there are many small but fertile valleys where the people carry on farming. Cattle-raising is not important in these mountainous lands, but large numbers of pigs feed on acorns and beechnuts in the forests, and sheep and goats graze on the rougher and poorer lands. *See Figure 305.*

Several of the varieties of trees that grow in the mountainous parts of Yugoslavia provide excellent lumber, and lumbering is carried on in many places. So important is this work that lumber is the most valuable single item among the exports of the country.

Mining in Yugoslavia. Coal and metal ores are found in the mountains of Yugoslavia, but more railroads must be built before mining can be of any great importance. Coal is mined in several places, but not in sufficient quantities to supply the needs of the country. One of the two leading iron-mining districts is north of Sarajevo, and there blast furnaces have been built to smelt the ores. On the map on pages 188–189 find a place in Yugoslavia where copper is mined, and another place where lead is mined.

The coast of Yugoslavia. In studying the map you discovered that Yugoslavia has a long, mountainous coast line on the Adriatic Sea. The coastal region is the only part of the country which has the Mediterranean climate, and, as you would expect, the people raise grapes, olives, and other fruits. Fishing is also important in the coastal towns and villages. From the map on pages 188–189 tell what kind of fish the fishermen catch in largest numbers.

Handicaps to the growth of ports. Although the coast of Yugoslavia has many good harbors, it has no large seaports. The reason for this is that the coast is bordered by long mountain ranges which form an almost unbroken barrier between the interior of the country and the sea. These mountains have hindered railroad building, and at present only three railroads reach the coast. Find them on the map on pages 192–193.

The central and southern railroads wind through the mountains, making transporta-

Photograph from Ewing Galloway, N. Y.

Figure 306. A trainload of logs on their way to a sawmill in the Carpathian Mountains in Rumania. Why are the Carpathian Mountains thickly forested?

Photograph from Ewing Galloway, N. Y.

Figure 307. A view in the oil field north of Ploesti, in Rumania. The petroleum from the wells in this field is pumped through pipe lines to refineries in Ploesti.

tion so slow and expensive that the ports to which they lead are of little importance. The northern railroad leads to the Italian port of Fiume, and is more direct. On land adjoining Fiume the Yugoslavs are developing a port which may in time handle the greater part of their shipping.

At present much of the trade of Yugoslavia by sea passes through the Greek port of Salonika, where the Yugoslavs are allowed to use a certain section of the water front free of charge. Turn to the map on pages 192–193 and show why it is convenient for the Yugoslavs to use this port.

Lumbering in Rumania. The Carpathian Mountains and the Transylvanian Alps in Rumania are covered with forests — chiefly beech trees on the lower slopes, and spruce and pine trees higher up. Lumbering is carried on in many places, and the Rumanians export large quantities of lumber to the countries of western Europe, where the forests have been largely cut down. *See Figure 306.*

Rumanian oil fields. On the map on pages 274–275 find the oil fields in the mountains of Rumania. Find also the city of Ploesti and the seaport of Constantsa (*J2*).

There are oil refineries in more than a dozen cities and towns near the oil fields, but the greatest refining center is Ploesti. From there the oil goes through a pipe line to Constantsa, on the Black Sea, where it is pumped into tank steamers for export. Mineral oils are among the most valuable exports of Rumania, and they go to many different countries of Europe. *See Figure 307.*

The Danube and the Rumanian seaports. The map on pages 274–275 shows that the Danube has built a great delta at its mouth. Notice that it has three main distributaries. The middle one has been deepened so that good-sized ocean ships can go upstream to the Rumanian ports of Galati and Braila.

You will remember that the Danube has been internationalized, and that all the countries through which it flows may use it freely. Therefore Galati and Braila export not only Rumanian grain and lumber, but some of the products of Yugoslavia, Bulgaria, and the landlocked countries of central Europe.

During the winter, navigation on the Danube stops on account of the ice, and the harbors of Galati and Braila are usually frozen over. Constantsa, farther south, is ice-free in

Photograph by Ewing Galloway, N.Y.

Figure 308. Part of the business section of Bucharest. Bucharest owes its growth and prosperity to its location in the rich plain of southern Rumania.

Photograph by Ewing Galloway, N.Y.

Figure 309. A glimpse of the water front at Belgrade, where the Sava River joins the Danube. How do you think Belgrade benefits by this location?

winter, and for that reason the Rumanians have made it their petroleum port, with large storage tanks for oil and a special basin for oil tankers. Some of the Rumanian exports of grain also pass through Constantsa.

Two capital cities. On the map on pages 274–275 find Belgrade (Beograd), the capital of Yugoslavia (*H2*), and Bucharest (Bucuresti), the capital of Rumania (*J2*). Which one is on the Danube?

Of the two capital cities, Bucharest is the larger and the more modern. It is the home of most of the wealthy people of Rumania, and the better part of the city has many fine public buildings and beautiful homes. Both cities are important business centers and carry on manufacturing to some extent. Both have flour mills, and Bucharest has oil refineries. *See Figures 308 and 309.*

Belgrade owes much of its importance to its location on the Danube at the point where the railroad from Berlin and Vienna crosses that river. Find Belgrade on the map on pages 192–193 (*K7*) and trace the railroad southward from there. Notice that at Nish the railroad divides, one branch running to Salonika and the other to Constantinople.

The railroad which runs from Belgrade to Constantinople is the great route of travel and transportation by land between central Europe and southwestern Asia. The fact that a railroad of great commercial importance runs through the Balkan Peninsula is the principal reason why many of the other European countries are deeply interested in the Balkan countries.

Trade and manufacturing in Rumania and Yugoslavia. Both Rumania and Yugoslavia are chiefly agricultural countries, and four fifths of the people are farmers. Farm products, as you know, are among their leading exports. Manufactured goods, especially textiles, iron and steel goods, and machinery, are the leading imports of both countries, showing that neither one has become an important manufacturing country.

At present the only manufacturing industry of importance in either country which depends on imported raw materials is the making of cotton goods for home use, and even this is small. The leading industries are chiefly those which depend on the use of raw materials produced at home, and among them flour-milling is the most important.

Sentences to complete. Complete each of the following sentences by giving reasons:

1. Yugoslavia and Rumania are much more important farming countries than Greece because _____.
2. Rumania's exports of grain are greater than those of Yugoslavia because _____.
3. Both Yugoslavia and Rumania export lumber because _____.
4. Large numbers of pigs, sheep, and goats are raised in the mountains of Yugoslavia because _____.
5. The mineral resources of Yugoslavia are poorly developed because _____.
6. There are no large seaports on the coast of Yugoslavia because _____.
7. Constantsa is an important oil-exporting port because _____.
8. The Rumanian ports of Galati and Braila are of interest to several other countries besides Rumania because _____.
9. Manufactured goods are the leading imports of Rumania and Yugoslavia because _____.

Photograph by Ewing Galloway, N. Y.

Figure 310. Angora, the capital of Turkey. Find Angora on the map on pages 274–275 (*K3*). What reason can you give for the fact that it is much smaller than Constantinople?

4. Bulgaria and Turkey

The map on pages 54–55 shows that the bridge between Europe and southwestern Asia is narrowest in the southeast, between the Ægean Sea and the Black Sea. In this part of the Balkan Peninsula are Bulgaria and the European part of Turkey. Although only a very small part of Turkey is in Europe, that part is of great interest to the other European countries. What reasons does the map on pages 192–193 suggest for this fact?

Farming in Bulgaria and European Turkey. The map shows that in the north Bulgaria shares part of the plain of the lower Danube with Rumania. Here are Bulgaria's corn, wheat, and cattle lands, which provide some of the leading exports of the country. This plain has two outlets to the Black Sea — one by way of the Danube, and the other by way of the Bulgarian port of Varna.

Bordering the plain on the south are the Balkan Mountains, where farming is limited to the valleys, and the rougher lands are used to pasture sheep and goats. In the western part of the mountains is Sofia (Sofiya), the capital and largest city of Bulgaria, through which runs the railroad from Belgrade to Constantinople.

The Balkan Mountains shut out the cold winter winds from the north, giving the lowlands of southern Bulgaria and European Turkey a warmer climate. Tobacco is one of the leading crops in these lowlands, and is the most important export of Bulgaria. Silkworms also are raised here, and in the foothills of the Balkan Mountains there are gardens where roses are grown for the manufacture of a perfume known as attar of roses.

Constantinople (Istanbul) — a crossroads city. Constantinople is by far the largest city of the Balkan countries, and for many years it was the capital of Turkey. After the World War the capital was changed to Angora, a much smaller city located on the northern margin of the Plateau of Anatolia in Asia Minor. *See Figure 310.*

Figure 311. A view of Constantinople, showing part of the Golden Horn, as the harbor is called. Constantinople is a great center of the Mohammedan religion, and the domed buildings with the tall, slender towers which you see in the picture are Mohammedan mosques. Look up the population of Constantinople on page 384.

Study Figure 311 and then find Constantinople on the map on pages 192–193 (*L7*). Notice that it stands at the point where the main highway of overland travel by railroad between Europe and southwestern Asia crosses the narrow waterway connecting the Black Sea with the Mediterranean. The Bosporus causes a break in the overland route, but from Skutari, across the strait from Constantinople, the railroad continues eastward to a town on the boundary between Turkey and Syria. From here the railroad will some day be extended to join the line which runs up the Tigris Valley from Bagdad.

After studying the map, you can understand why Constantinople has long been a large and important city. It has a "crossroads" location at the meeting place of two continents and two seas. The overland trade between Europe and southwestern Asia passes through it, and all the shipping between the Black Sea and the Mediterranean must pass by it.

Although, as people say, "Turkey sits astride the straits," the waterway between the Black Sea and the Mediterranean has been internationalized, and may be used freely by the ships of all nations. This free use of the Dardanelles, the Sea of Marmara, and the Bosporus is of special value to the countries which border the Black Sea.

Where "East meets West." Sailing into the Golden Horn, you will see the slender towers, or minarets, of scores of Mohammedan mosques outlined against the sky, giving the city an Oriental look. It is often said that Constantinople is a city where "East meets West." You will understand what this means after you have visited the old "Turkish quarters" of the city on one side of the harbor and the newer "foreign quarters" on the other.

In the Turkish quarters you will find the streets narrow, winding, and crowded with carriages, heavily loaded donkeys, and swarms of people on foot. Merchants seated in little booths opening on the sidewalks bargain with customers in the Oriental fashion, and craftsmen work at their trades in tiny shops. Wandering about in this part of the city, you might easily believe that you were in some faraway city of Asia, where people live and work in Eastern ways. *See Figure 312.*

Cross the bridge to the foreign quarters, where people from the countries of Europe carry on business, and you will feel that you are in the Western world again. Here trolley cars and automobiles move along well-paved streets, business is carried on in modern stores and office buildings, and work of all kinds is done in Western ways.

Figure 312. A street scene in the old Turkish quarters of Constantinople. The man at the left is a lemonade peddler, and the little boy is selling fruit.

Anatolia

The "Mediterranean hem" of Anatolia. The most densely populated part of Anatolia is the "hem" of the peninsula, where the climate is of the Mediterranean type. Most of the people live on little farms where they raise winter wheat and barley and Mediterranean fruits. The most valuable "export" fruits are sundried figs and raisins which are grown in the neighborhood of Smyrna, the chief port of Anatolia.

In several localities tobacco-growing is very important — so important that tobacco is the leading export of Turkey. Turkish tobacco is used in our own country and in many others for making cigarettes.

On the map on pages 274–275 find the places in Anatolia where cotton is an important crop. Cotton-growing is increasing, and a little cotton is exported. The leading cotton-growing district is in the lowland around Adana, and in that city there are cotton gins, cottonseed-oil mills, and a few cotton factories.

Grazing lands of the interior. The rainfall of Anatolia grows less and less from the coasts toward the interior, and the central plateau is very dry. For this reason the interior is chiefly a grazing region for sheep and goats, and wool is an export of some importance. Anatolia is the native land of the famous Angora goats, from which mohair is obtained.

The sheep's wool and the mohair produced in this region have led many of the people to engage in the weaving of woolen cloth and the making of carpets and rugs. This work is carried on in the homes and in small workshops in many of the towns and villages. Large quantities of Anatolian rugs are exported to our country, where they are sold as one of the cheaper grades of Oriental rugs.

Mining, manufacturing, and trade. The peninsula of Anatolia is believed to have much mineral wealth, but as yet the Turks have done little to develop it. Manufacturing too is of little importance, and the only industry which provides an important export product is the weaving of carpets and rugs.

Among the exports of Turkey, tobacco, fruits, wool, and rugs are the leaders, and among the imports cotton goods are first.

Matching countries and capitals. Match correctly the countries and capital cities listed below:

Spain	Angora
Portugal	Athens
Italy	Belgrade
Greece	Bucharest
Albania	Lisbon
Yugoslavia	Madrid
Rumania	Rome
Bulgaria	Sofia
Turkey	Tirana

A population test. Below is a table showing the density of population in the countries of southern Europe and Anatolia. Study the table carefully, and then answer the questions following it.

Country	Population per Square Mile
Italy	349
Portugal	175
Rumania	157
Bulgaria	143
Yugoslavia	138
Greece	126
Spain	115
Turkey	46

1. Compare this table with the one on page 263 showing density of population in the central European countries. As a whole, how do the countries of southern Europe compare in density of population with those of central Europe? What reasons can you suggest for the difference?

2. Name the country of southern Europe which has almost as many people per square mile as the most densely populated country of central Europe. What reasons can you give for its dense population?

3. What have you learned about the surface and climate of the various countries of southern Europe and Anatolia which helps to explain why Spain and Turkey stand at the foot of the list in density of population?

4. What reasons can you suggest for the fact that Yugoslavia is somewhat more densely populated than Greece? for the fact that Rumania is somewhat more densely populated than Yugoslavia?

Naming countries. The blank space at the beginning of each sentence below stands for the name of some one of the countries of southern Europe and Anatolia. Give the correct name to begin each sentence, and complete the sentences which need endings.

Of these countries

1. ITALY carries on the most foreign trade because _____.

2. SPAIN is the one with the most mineral wealth, yet it is not a great manufacturing country because _____.

3. ITALY is the one which makes most use of hydroelectric power because _____.

4. RUMANIA is the one which exports the most grain because _____.

5. YUGOSLAVIA is the one which depends most largely on its forest resources.

6. RUMANIA is the only one which exports petroleum.

7. GREECE is the one well known for its exports of tobacco and currants.

8. PORTUGAL is the one which depends most largely on its fisheries.

9. ALBANIA is the least important because _____.

10. TURKEY is the one which is largely in Asia Minor.

Some things to explain. Explain why

1. Constantinople is the largest city of the Balkan Peninsula.

2. The countries farther northwest in Europe are interested in the Balkan countries.

3. The fact that the Dardanelles, the Sea of Marmara, and the Bosporus may be used freely by the ships of all nations is a great help to Rumania and Bulgaria.

4. People say that Constantinople is a city "where East meets West."

Addressing letters. Imagine that you have a friend who is traveling in Italy and who has asked you to send him a letter at each of the cities listed below. Give for each city the Italian name which you should use in addressing the letters.

Florence Naples Venice Genoa
Rome Turin Milan

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Figure 313. A picture taken in a village on the Nile. Why are the houses built with flat roofs? What do the palm trees show about the climate of Egypt?

Figure 314. Egyptian sailboats on the Nile at Cairo. Boats of this kind are used to carry goods up and down the Nile between the towns along its banks.

INDEPENDENT COUNTRIES OF AFRICA AND SOUTHWEST ASIA

I. EGYPT — LAND OF THE NILE

Foreword. Study the map of the possessions of the European countries in Africa which you have been making, and see how many political divisions of that continent are still uncolored. If your map is correct, it should show three such divisions,— Egypt, Ethiopia, and Liberia, which are the only independent countries in Africa. Of the three, Egypt is by far the most important. Do you know any reasons for this fact?

People say that "Egypt is the Nile, and the Nile is Egypt." This saying is a true one, for Egypt lies in the Sahara Desert, and without the Nile it would be as useless as the rest of that dry, barren region. But because of the Nile, Egypt has within its borders the most densely populated area in all Africa. Figure 90 (p. 97) shows that this area is a narrow strip of land bordering the river, and that the rest of Egypt is as thinly populated as the other parts of the desert. *See Figures 313 and 314.*

The Egyptians, like the Arabs of Arabia and northern Africa, are people of the white race. The Nile Valley in Egypt has over 1000 people to the square mile, and is more thickly populated than the most crowded industrial districts of western Europe and the United States. What is still more surprising is the fact that most of the people make their living by farming. How do you suppose this is possible in a land where for months at a time not a drop of rain falls?

One of the world's great rivers. The Nile is one of the great rivers of the world. It is longer than any other river except our own Missouri-Mississippi, and about one fourth of its course is in Egypt. On the map on page 96 find Khartum (*G3*), in Anglo-Egyptian Sudan, where the White Nile from the Lake Plateau of East Africa joins the Blue Nile from the Ethiopian Highlands. Trace the Nile northward from Khartum to its mouth, and

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Figure 315. The Aswan Dam, over a mile long. This great dam holds back part of the water of the Nile. When water is needed downstream, it is let out by opening gates in the lower part of the dam.

notice that there are six *cataracts* in its course. These are places where the river tumbles over rock ledges, forming rapids and falls.

The first cataract, or the one farthest downstream, is at Aswan, in southern Egypt. There the great dam which you see in Figure 315 has been built across the Nile. Can you suggest any reason for the building of this dam?

Picturing the Nile Valley. Figure 316 will help you to picture the Nile Valley in Egypt. Notice the narrow, flat-bottomed trough through which the Nile flows northward to Cairo, and the great delta which begins at Cairo and spreads out in fan shape to the Mediterranean. Use the scale of miles to estimate the width of the valley and the length and width of the delta.

If you should fly in an airplane from Aswan to Cairo, following the course of the Nile, you would see that the valley is a narrow green band of cultivated fields in the midst of the bare, reddish-brown desert. Scattered through it are many little villages of mud-brick houses and a few good-sized towns.

Continuing your flight from Cairo across the delta, you would look down on a broad stretch of very low land divided into thousands of small farms, and crisscrossed by distributaries of the river, canals for irrigation and drainage, and a network of railroads. You would also see that the delta is dotted with towns and villages.

A great oasis. By now you will know that the Nile Valley is a great oasis, where farming is made possible by use of the waters from the river. In fact, it is the greatest oasis in all the world. Here, for thousands of years, the Egyptians have carried on irrigated farming, making an almost rainless region produce large quantities of grain and other crops.

The winters are warm in Egypt, and therefore farming can be carried on the year round. The principal winter crops are wheat, barley, and beans, onions, and other vegetables; and the principal summer crops are cotton, corn, rice, and sugar cane.

Using flood waters for irrigation. From ancient times until less than a hundred years ago the Egyptians depended chiefly on the annual, or yearly, flood of the Nile for water to irrigate their farm lands. Newer methods of irrigation are now used in the delta and the lower part of the Nile Valley, but the "flood method" is still common in the upper part of the valley.

The annual flood comes in September and October and is due to the heavy rains which fall in the Ethiopian Highlands during the summer. Because of these rains, the Blue Nile pours huge quantities of water into the main stream. This causes the Nile to rise and overflow its banks, flooding the bordering lands to a depth of several feet.

In order to hold the flood waters long enough for the soil to be thoroughly soaked,

the lands irrigated in this way are divided into basins surrounded by low dikes, and the basins are connected by shallow canals which carry the water from one to another. When the flood waters finally drain off, a thin layer of fertile mud is left on the fields, which enriches the soil. While the land is still wet, the farmers plant their wheat, barley, beans, and other winter crops. These crops grow quickly during the warm winter and are ready to be harvested in February or March.

So long as the flood method was the principal means of irrigation in Egypt, the only places where the farmers could raise summer crops—that is, crops planted in the spring and harvested before the flood season—were the fields immediately bordering the river and its distributaries. For these fields water was lifted from the streams by *shadoofs* and water wheels. These simple methods of irrigation are still used in many places in Egypt even today. *See Figure 317.*

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Figure 316. A relief map of the valley and delta of the Nile.

Year-round irrigation. Although Egypt is an independent country, the British have long been interested in it because the Suez Canal and the northern section of the Cape to Cairo Railway are in Egyptian territory. In order to make year-round irrigation possible in the Nile Valley, the British have built the great dam at Aswan and several smaller dams at other places along the river.

These dams hold back the waters of the Nile, storing them up for use all through the year. Water for irrigation can be let out whenever it is needed, and canals carry it to the farm lands in the lower valley and the delta. Thus these lands can be irrigated throughout the whole year, and the farmers can raise crops in summer as well as in winter.

Turn to the map on pages 274–275 and name the leading crops grown in the lower valley of the Nile and on the delta. The farms are very small in these crowded lowlands, and most of the farmers do their work in the old-fashioned ways of long ago, but altogether they produce millions of bushels of wheat, corn, and other food crops, and large quantities of cotton.

Although the Egyptian farmers raise foodstuffs in large quantities, the population is so great that nearly all these products are needed for home use, and additional supplies of wheat

Figure 317. Lifting water for irrigation from the Nile by means of a shadoof. Explain how the shadoof works.

Figure 318. Picking cotton in Egypt. Egyptian children work in the cotton fields with their fathers during the picking season. Where in the United States do we raise the Egyptian variety of cotton?

flour, sugar, and rice have to be imported. Therefore, in spite of being almost entirely an agricultural country, Egypt is not a great exporter of foodstuffs. From the map on pages 274–275 name the one food product which ranks high among the exports. What crop supplies all the other leading exports?

Egyptian cotton. It is clear from the map that cotton is the great export crop of Egypt. The exports of cotton fiber alone are worth more than four times all the other exports combined, and cottonseed and cottonseed cake are also shipped to distant lands.

Egyptian cotton has a long, silky fiber, and because of its fine quality it is in great demand in all the important cotton-manufacturing countries. Nearly all the farmers in the delta and the lower valley of the Nile raise cotton as a money crop. They sow the seed in February or March, pick the cotton in September or October, and send it to towns where it is ginned and baled for export. *See Figure 318.*

Great Britain usually buys more than half of the yearly crop of cotton from Egypt. Can you explain why? Our own country is also a good customer for it, because the amount of "Egyptian" cotton which we raise on irrigated lands in the Southwest is not sufficient to supply our needs.

Alexandria — the seaport of Egypt. On the map on pages 274–275 find Alexandria, the leading seaport of Egypt (*J4*), and notice its location at the western end of the Nile delta. Can you think of any reason why Egypt's chief seaport should have grown up here, rather than at the mouth of one of the distributaries of the Nile?

Study the map more closely, and you will see that the mouths of most of the distributaries of the Nile are almost cut off from the sea by sand bars along the outer margin of the delta. The distributary mouths and the openings between the sand bars are choked with shifting mud and sand washed down by the Nile, and are much too shallow for ocean-going ships. Since these waterways can be used only by small boats, the towns located on them are unimportant as ports.

Figure 319. An ocean freighter being loaded with raw cotton at the Egyptian port of Alexandria. If this cotton is bound for England, to what English port is the ship probably going?

Alexandria is located on a sand bar; but since it is beyond the westernmost of the distributaries of the Nile, its harbor is free from shifting sands. It is not a good natural harbor, however, and has to be protected by breakwaters. *See Figure 319.*

Alexandria was founded over two thousand years ago, and today it is the second largest city in Africa. At its busy wharves ships from distant lands load and unload cargoes, and in its cotton exchange the business arrangements are made for selling cotton to manufacturers in England, the United States, and other countries. What do you find among the imports of Alexandria which shows that the Egyptians do not use much of their cotton for manufacturing?

Cairo — the largest city of Africa. On the map on pages 274–275 find Cairo, the capital of Egypt (*K5*). This is the only city in Africa with over a million people. Notice that it is located on the right bank of the Nile, at the head, or inner end, of the delta. Because of its location where the narrow valley of the Nile ends and the delta begins, Cairo is the point where the railroad from Aswan meets the railroads from Alexandria, Port Said, and other parts of the delta. It is chiefly this "crossroads" location in the midst of the richest agricultural region of Africa which has made Cairo the largest city of the continent. *See Figure 320.*

If you visit Cairo in the winter, you will find many visitors from Europe and America there, for the winter weather is delightfully mild. The hotels where the visitors stay, the government buildings, and the better stores are in the "European quarter" of the city, where the streets are well paved and broad enough for automobiles.

Very different are the old "native quarters" of the city, with their hundreds of Mohammedan mosques and their Oriental bazaars full of life and color. There you will find a tangle of streets so narrow and crooked that

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Figure 320. Part of the city of Cairo. Notice the flat-roofed buildings, and the slender minarets of the Mohammedan mosques. Notice also how level the surface of the Nile delta is.

Figure 321. The pyramids near Cairo. These wonderful monuments are built of huge blocks of stone, and are over 5000 years old. Each one was built as a tomb for an Egyptian king and queen.

it is clear they were laid out long before anyone dreamed of automobiles,—streets lined with little shops where workmen carry on their trades and with tiny booths where merchants sell their wares. From daylight until long after dark endless streams of people move through these Old World streets, elbowing their way among carts and heavily loaded donkeys and camels, and stopping now and then to chat with one another or to bargain with the merchants.

While you are in Cairo you will surely visit the National Museum, where the Egyptians have preserved many of the treasures which have been taken from the tombs of the kings and queens of long ago. Among these treasures are paintings, clothing, jewelry, and many objects of daily use which tell of the life and work in Egypt in ancient days. You will also make a trip by automobile, or on camelback if you choose, to the great pyramids which stand on the edge of the desert, five miles beyond the Nile from Cairo. *See Figure 321.*

At Cairo you can take passage on a comfortable steamer and go up the Nile to Luxor, where the tomb of Tutenkhamon, a young king who ruled Egypt more than three thousand years ago, is located. Many of the wonderful things taken from his tomb are in the museum at Cairo.

Mineral resources and manufacturing. Egypt is not a country of great mineral resources, and there are but few places where mining is of any importance. One is in the Sinai Peninsula, where manganese ore is mined; and another is on the desert shore of the Red Sea, where there are phosphate mines. Along the western margin of the Gulf of Suez there are oil wells, from which the crude oil is sent in tank steamers to refineries in Suez. The chief products of these refineries is fuel oil, which is stored at Suez and Port Said to supply ships which need refueling as they go through the Suez Canal.

Since Egypt is so largely an agricultural country and has no coal, manufacturing is of little importance. There are, of course, a few manufacturing plants where Egyptian products are prepared for use, such as the cotton-ginning plants and cottonseed-oil mills in some of the delta towns and the oil refineries at Suez. Except for work of this kind, the only important manufacturing industry is the making of cigarettes. The tobacco comes from Greece and Turkey, and many of the men who make the cigarettes are Greeks.

Egyptian trade. Since nearly all the people of Egypt are farmers, it is not surprising that the leading exports are agricultural products. An interesting fact about Egyptian trade is that the exports consist largely of a single agricultural product. In foreign trade, cotton is more important to Egypt than coffee is to Brazil or nitrate to Chile. Chiefly with its cotton, then, Egypt pays for a variety of imports from distant lands.

Giving reasons. Complete each sentence below by giving reasons for the fact which it states.

1. The fourteen millions of people in Egypt are crowded into an area which makes up less than $\frac{1}{25}$ of the country because _____.
2. The prosperity of the Egyptian people depends on the rain which falls farther south in Africa because _____.
3. Since the British first became interested in Egypt, more and more land in the delta and lower valley of the Nile has been used for growing crops the year round because _____.
4. The Nile is not navigable throughout its entire course in Egypt because _____.
5. The Egyptian farmers build their houses of sun-dried mud bricks instead of wood because _____.
6. Although Egypt is almost wholly an agricultural country, it is not a great exporter of foodstuffs because _____.
7. Great Britain has a larger share than any other country in the export trade of Egypt because _____.
8. Cairo is the largest city of Egypt because _____.
9. The seaport of Alexandria is west of the mouths of the Nile because _____.
10. The British hold Port Said and Suez because _____.

An import test. Below is a list of some of the leading imports of Egypt. Explain why the Egyptians need each one of them.

cotton goods	coal	lumber
wheat flour	fertilizers	tobacco

A model to make. If you have a sand table or can get some modeling clay, make a good-sized model of the portion of Egypt shown in Figure 316. Show the locations of Cairo, Alexandria, the Aswan Dam, and the ports at either end of the Suez Canal. Perhaps you can think of ways to show some of the chief crops of Egypt, the pyramids near Cairo, a ship passing through the Suez Canal, and some boats on the Nile.

Special credit work. Try to find a book which tells about the Egyptian pyramids, or the temples at Karnak, or the discoveries in the tomb of Tutenkhamon. Report to your class on one of these subjects.

II. ETHIOPIA AND LIBERIA

Foreword. On the map on page 98 find the independent countries of Ethiopia[1] and Liberia. Which one is a mountainous country without any seacoast? Which one is on the west coast of tropical Africa? Which one do you think is probably more densely populated? Check your answer to this question by Figure 90 on page 97.

The people of Liberia are negroes. Those of Ethiopia are people of mixed race, and their ancestors are believed to have come to Africa long ago from the southwestern part of Asia. Have you any idea how Ethiopia and Liberia happen to be independent countries, surrounded, as they are, by possessions of European countries?

[1] For many years the official name of this country was Abyssinia, but the people have recently changed it to the ancient name of Ethiopia.

ETHIOPIA

Mountains and independence. The map shows that Ethiopia is a plateau and mountain country. The mountains in the western part are high and rugged, and the plateau is crossed by rivers which have carved deep canyons. The rough surface has hindered the development of the country; but in the days when Europeans were gaining possession of one part of Africa after another, it helped the Ethiopians to keep them out and to preserve the independence of the country.

Three "work zones." Like Mexico, Ethiopia may be divided into three zones, or belts, according to the elevation of the land above sea level. Work in each zone differs somewhat from work in the others because of differences in climate.

Salisbury from Ewing Galloway, N. Y.

Figure 322. An Ethiopian farmer pounding grain in a hollow log to make flour. His house is built of sticks of wood, and the roof is thatched with straw.

The lowest zone includes the lands that are not over 5000 feet above sea level. Because Ethiopia is so near the equator, the climate in this zone is hot the year round, and the people raise tropical and subtropical crops. Chief among them is coffee, which is one of the few exports of Ethiopia. In certain parts of this zone wild elephants are numerous, and the people hunt and kill them, chiefly to obtain the ivory tusks for export.

The second zone is the land between 5000 and 8000 feet, where, because of greater elevation, the climate is mild, but not hot, the year round. This is the zone where most of the people live and where Addis Ababa, the capital and largest town of Ethiopia, is located. The principal crops of the zone are temperate cereal grains and fruits, but the work of greatest importance is cattle-raising. *See Figure 322.*

The third and highest zone is the land over 8000 feet, where the climate is still cooler. Little farming is carried on in this zone, and most of the people get their living by keeping sheep and goats. Hides and skins from the middle zone and the highest zone are the leading exports of Ethiopia.

Handicaps to development. The roads in Ethiopia are little better than trails, and transportation is carried on almost entirely by pack horses, mules, donkeys, and camels. One narrow-gauge railroad connects Addis Ababa with Jibuti, the port of French Somaliland on the Red Sea, but the trains run only twice a week in each direction. Poor transportation has so hindered the development of Ethiopia that the mineral resources are almost untouched, farming is much less important than it might be, and the foreign trade is small.

Liberia

A negro republic. Liberia was founded over a hundred years ago as a homeland for freed slaves from the United States, and ever since that time it has been an independent negro republic. Some of its people are descendants of the freed slaves, and the rest are African negroes. The capital city, Monrovia, was named for President Monroe of the United States, who helped to establish the republic.

As you would expect from its location on the west coast of tropical Africa, Liberia has a hot, rainy climate. The people grow their own foodstuffs in small gardens, and for export products they raise a little coffee and cacao and gather palm kernels and rubber in the forests. In recent years an American rubber company has established large rubber plantations in Liberia, which provide work for several thousand people. At present, palm kernels and palm oil are the leading exports, but in time rubber may be more important.

Can you explain these facts? 1. Monrovia, the capital of Liberia, and Addis Ababa, the capital of Ethiopia, are both between the equator and the parallel of 10° north latitude. Monrovia is hot the year round, while Addis Ababa is seldom uncomfortably warm. What reason can you give for these differences in temperature?

2. Liberia is much more densely populated than Ethiopia. How do you explain this?

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Figure 323. A view near the mountainous margin of the Plateau of Iran in northwestern Persia. The parts of the plateau which cannot be irrigated can be used only for pasturing sheep and goats. Where there are streams for irrigation, the people raise crops of grain and vegetables, and many different kinds of fruits.

III. ARABIA, PERSIA, AND AFGHANISTAN

Foreword. On the map on page 118 find the Plateau of Arabia, the Plateau of Iran, and the Hindu Kush Mountains. What does Figure 112 show about the rainfall in these regions of southwest Asia? Do you expect them to be thickly populated or thinly populated? Check your answer by Figure 113.

The three countries in this part of Asia which are wholly independent of European control are Arabia, Persia, and Afghanistan. Arabia is made up of several more or less independent states, but all the smaller states recognize Nejd, the largest one, as their leader. Before you read further, locate Arabia, Persia, and Afghanistan on the map on page 123, and use that map to work out the map studies in the next column. The map work will help you to picture these countries more clearly.

Map studies. 1. What countries under British control border Arabia? Persia? 2. What bodies of water separate southern Persia from Arabia? 3. What kind of land makes up most of Afghanistan? 4. What kind of land borders the Plateau of Iran in Persia? 5. What kind of work seems to be most important in the plateau regions of Arabia, Persia, and Afghanistan?

6. In which of these three countries does farming appear to be most important? 7. How do you explain the production of dates in the dry Plateau of Arabia? 8. What product of Persia do you think is probably most important in world commerce? 9. How do you explain the noticeable lack of railroads in Arabia, Persia, and Afghanistan? 10. Which of these countries has no railroads and no seacoast?

High lands and dry lands. The plateaus of Arabia and Iran are fairly high, rising to elevations of from 3000 to 5000 feet above sea

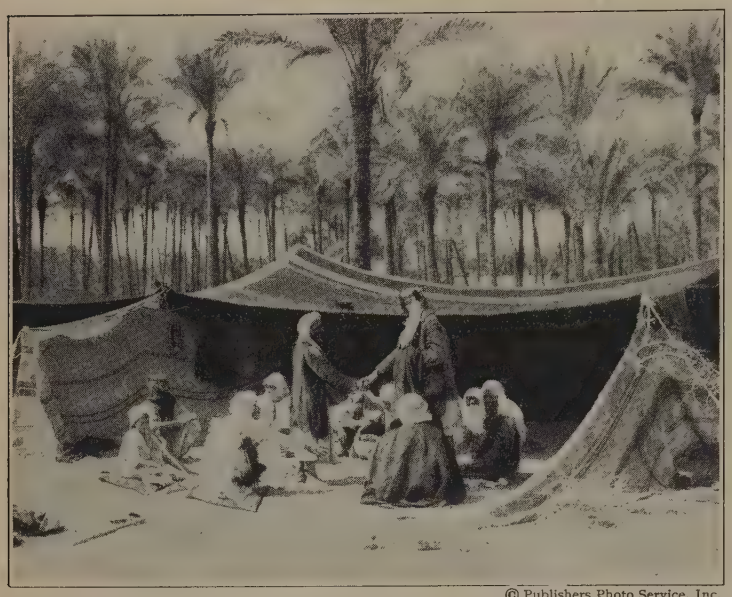

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Figure 324. A Bedouin chief and his family encamped outside an oasis town. What reason can you give for the fact that the only houses the Bedouins have are tents of woolen cloth?

level. The mountains which surround the Plateau of Iran are still higher, and the ranges of the Hindu Kush are some of the highest and most rugged mountains in the world.

You have already discovered that these regions of southwestern Asia have very little rain. They are so dry that large stretches of Arabia are desert lands, and many parts of the Plateau of Iran have but the scantiest covering of poor grass. The mountains have a little more rainfall than the plateaus, and in Persia and Afghanistan snow falls on the higher mountain slopes in the winter. This is a help to the people, for the melting snow drains off in streams which provide water for irrigation on the lower lands in the spring and summer. *See Figure 323.*

If these regions were lowlands, they would be warm the year round, for they extend from the warmer part of the temperate zone into the torrid zone. As it is, the summers are hot everywhere except on the high mountain slopes; but because of the altitude the winters are fairly cold, and at times the temperatures fall below the freezing point.

Nomadic life in the drier regions. In your study of "Home Life in Faraway Lands" you learned about the groups of nomadic Bedouins who wander about in the dry Plateau of Arabia, seeking grass and water for their flocks and herds. They measure their wealth in the number of camels, sheep, goats, and horses which they own, for these animals provide them with most of their food and clothing materials and with their only means of transportation. Now and then the Bedouins stop at one of the oasis towns to exchange some wool, skins, and cheese for small supplies of flour, dates, and coffee, or perhaps a saddle or a few cooking pots. *See Figure 324.*

In the drier parts of Persia and Afghanistan there are other groups of people who wander from place to place with their flocks and herds. All these nomadic people make a very poor living and often suffer great hardships in their wanderings. *See Figure 325.*

Towns and farm lands. The number of nomads in these countries is small compared with the number of people who live in and near the towns. The towns have grown up at places where water for irrigation can be obtained from wells or streams and the people can make a living by farming. These "garden spots" are found along the margins of the deserts, in the oases, and in the valleys among the mountains.

Arabian crops. The oasis towns of Arabia will remind you of those in the Sahara. They are clusters of mud-brick houses surrounded by gardens which are irrigated with water from wells, and the size of each town depends on the amount of water that can be obtained. The people raise fruits, vegetables, and grain, and forage crops for the camels and donkeys which are used to lift water from the wells and to carry burdens.

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Figure 325. Persian nomads in front of their tent. Their clothing and their tent differ somewhat from those of the Bedouin Arabs, but they live in much the same way.

In all these oases there are groves of date palms, for these trees grow better in hot, sunny deserts than anywhere else, provided, of course, that their roots can reach water. The people dry the dates in the sun, pack them in wooden boxes, and send them by camel caravan to the coastal towns for export. Dates are the only export of any importance, for the rest of the agricultural products are used by the people of the oases or are traded with the Bedouins.

The map on page 123 shows that coffee is grown in the Arab state of Yemen on the coast of the Red Sea. There the mountains cause a little more rain to fall, and the fogs from the sea provide additional moisture. Most of the coffee is used in Arabia, for the Arabs are great coffee-drinkers.

Arabian towns. On the map on page 123 find Mecca, the largest town of Arabia, and Medina, farther north (*D6*). Notice that the only railroad of Arabia is the one which connects Medina with Damascus, in Syria. Elsewhere in Arabia travel and transportation are chiefly by camel caravan over routes which connect the oasis towns with one another and with the small seaports. Automobiles are used in a few places.

Mecca is the place where Mohammed, the founder of the Mohammedan religion, was born, and Medina is his burial place. Every year thousands of Mohammedans make pilgrimages to these two cities, both of which depend almost wholly on the selling of food and other supplies to the pilgrims. *See Figure 326.*

The "Mediterranean" crops of Persia and Afghanistan. In the mountain valleys of Persia and Afghanistan and on the margins of the Plateau of Iran, crops like those of the Mediterranean lands are raised. The light rainfall of these sections comes in the winter, making it possible for the people to raise winter wheat and barley. The summer crops are irrigated with water from

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Figure 326. Mecca, the sacred city of the Mohammedans. The dark building in the center of the great open court contains a stone which every Mohammedan wishes to touch once in his life.

By Ewing Galloway, N.Y.

Figure 327. A Persian vineyard. The grapes have been gathered and spread out on trays to dry in the sun. Raisins, or sun-dried grapes, have been exported from Persia for centuries.

streams and wells, and among them fruits and nuts are especially important. A great variety of fruits are raised, including grapes, peaches, plums, apricots, melons, and figs of unusually fine quality, and in Persia considerable quantities of some of the fruits are sun-dried for export. *See Figure 327.*

The mulberry trees which are grown in some of the sheltered valleys in northern Persia and in Afghanistan are another reminder of the Mediterranean lands. They are cultivated to provide leaves to feed silkworms, which, in turn, supply the raw material for the weaving of silk goods.

In Persia tobacco and cotton are important summer crops in some of the irrigated districts. The tobacco is grown almost entirely for home use, but small quantities of cotton are exported.

Persian rug-makers. Perhaps you know that the finest of our Oriental rugs come from Persia. In every city, town, and village you will see women and children sitting at looms, patiently tying the knots of colored wool which make the patterns that we admire so much. Rug-making is a very old industry in Persia, for rugs have always been the principal furnishings in Persian homes. Wood is scarce in this dry land, and furniture is costly. Wool is plentiful, and walls can be made beautiful and floors comfortable when covered with soft, finely woven rugs. For many years all the rugs were made in the homes, and for home use; but now that so many are wanted by the people of other countries, workshops have been established where many weavers work together. *See Figure 328.*

Some valuable oil fields. The only important mineral product of the independent countries of southwestern Asia is the petroleum of Persia. In the western part of the country, not far from the boundary of Irak, the British have drilled wells which make Persia one of the chief oil-producing countries of the world. Since the opening of this oil field petroleum has taken first place among the exports of Persia, the place long held by Persian rugs.

Persian cities. Turn to the map on page 123 and find Tabriz and Teheran (*E–F 3*). Which one is the capital of Persia? Which one is the terminus of the only railroad which enters Persia? These and the other Persian cities named on the map owe their growth to the fact that they are trading centers for the best farming sections of the country.

Afghanistan and its capital. Afghanistan is so mountainous that far more of the people are engaged in raising sheep, goats, camels, and other live stock than in farming, and hides and skins, with a little silk, are the chief exports. The country has no railroads and no seacoast. Therefore the people have little to do with the outside world, and their trade with other countries is small.

Kabul, the capital, is the only city of any importance. Find it on the map on page 123 (*J 4*) and notice that it is directly west of the Khyber Pass. This narrow pass is the only route across the mountains to India, and the one by which most of Afghanistan's trade is carried on. Kabul, therefore, is the center where goods are collected to be sent out of the country and from which goods that come into the country are distributed.

A city test. Name each city described below and answer the questions about it.

1. The largest city of Africa. Of what country is it the capital? Why does it entertain many visitors from distant lands each year?
2. The chief seaport of Egypt. Why is it an important cotton market? Why is much of its trade with Great Britain?
3. The capital of Liberia. For whom was it named? Why are all the government officials in this town negroes?
4. The capital of Ethiopia. In what zone of the country is it located? What reason can you suggest for its location in that zone?
5. The city where Mohammed was born. In what country is it located? Why does it have thousands of visitors every year?
6. The capital of Persia. In what part of the country is it located? What kind of workshops should you expect to see in this city?
7. The capital of Afghanistan. Why is it the chief commercial center of the country?

Giving reasons. Complete each sentence below by giving reasons.

1. Egypt is by far the most important of the three independent countries of Africa because _____.
2. Of all the countries in the world, Great Britain is the one most interested in Egypt because _____.
3. People say that "Egypt is the Nile, and the Nile is Egypt" because _____.
4. The United States is a good customer for Egyptian cotton because _____.
5. Ethiopia has been able to maintain its independence because _____.

By Ewing Galloway, N.Y.

Figure 328. Persian boys weaving a rug. Notice that they are following patterns drawn on paper. It takes many months to make one of these beautiful rugs, for every knot is tied separately by hand.

6. The foreign trade of Ethiopia is small because _____.
7. Liberia helps to supply one of the great manufacturing industries in the United States with raw material because _____.
8. Some of the people of Arabia and Persia live nomadic lives because _____.
9. The size of the towns in Arabia depends largely on the amount of water that can be obtained because _____.
10. In certain parts of Persia the people raise crops like those of the Mediterranean lands because _____.
11. The British have a special interest in Persia because _____.
12. Rug-making has long been an important industry in Persia because _____.
13. The people of Afghanistan have little to do with the outside world because _____.

Special credit work. Find out all you can about Persian and other Oriental rugs — their patterns and how they are woven — and tell your classmates about them.

Figure 329. A train on the Trans-Siberian Railroad stopping at a station in the western part of Siberia. This is the only transcontinental railroad across Asia, and the only railroad which connects European Russia with the part of the Soviet Union in the Far East. It was built by the Russians and was completed in 1904.

THE UNION OF SOVIET SOCIALIST REPUBLICS

I. THE LARGEST COUNTRY IN THE WORLD

Foreword. The Union of Soviet Socialist Republics is often called Russia, for it includes most of the land which belonged to the Empire of Russia before the World War. In 1917 there was a revolution in Russia. The emperor, who was called the Czar, was forced to give up his throne, and a committee of the people took charge of the government.

Since the revolution the country has been completely reorganized, and is now made up of several republics, the largest of which is the Russian Soviet Republic. The word *soviet* means a council of delegates of workers. Each village, town, and city, each province of each republic, and each republic itself is governed by a soviet. All the republics are parts of the Soviet Union, and they all send representatives to the All-Union Congress which meets at Moscow, the capital city.

Map Studies. Before you read further, use the two maps on page 324 to work out the following map studies:

1. What can you say about the size of the Soviet Union? 2. Is it a European country or a Eurasian country? 3. What bodies of water does it border? 4. What kind of land makes up most of the western half of the country? 5. What part of the country is best supplied with railroads? 6. What use do you think the people make of many of the rivers?

Now turn to page 119 and locate the Soviet Union on Figure 113. What part of the country is most densely populated? What reason does the rainfall map suggest for the fact that the European part is so much more densely populated than most of the Asiatic part? Compare the population map with the lower map on page 324 and see if you can discover any relationship between the distribution of population and the railroads.

First Glimpses of the Soviet Union

Figure 330. A Russian farmer plowing land in the southern part of the Siberian Plains. Why is farming easy in such a region? The tractor that the farmer is using was made in the United States.

A giant country. You have discovered from the maps that the Union of Soviet Socialist Republics stretches from east-central Europe all the way across Asia to the Pacific Ocean. This is the largest country in all the world. The European part is usually called European Russia, and it is nearly as large as all the other European countries combined. The Asiatic part of the Union is nearly four times as large as the European part, and the country as a whole is over two and a half times the size of the United States without Alaska.

On the lower map on page 324 trace the railroad route from Leningrad (*C3*) to Vladivostok (*N4*). The Asiatic part of this railroad is called the Trans-Siberian Railroad because it crosses the vast stretch of Asia known as Siberia. The distance by train from Leningrad to Vladivostok is about 5500 miles, or nearly twice the distance by train across our country from New York to San Francisco. Study Figure 329, and then use the maps on page 324 to describe the various regions which you would cross on the railroad trip from Leningrad to Vladivostok. The names of the regions are on the upper map.

The plains of the Soviet Union. You have discovered that the western half of the Soviet Union is made up largely of lowland plains. Turn to page 324 again and name the three divisions of these plains. Notice that they extend from the Arctic Ocean to the Black and Caspian seas in Europe, and to the high mountains in central Asia.

Great stretches of these vast plains are less than 500 feet above sea level, and there are but few places more than 1000 feet above the sea. Figure 60 (p. 66) shows that the great continental ice sheet of long ago spread over the northern and western parts of European Russia. There, as in northern Germany and Poland, the plain is covered with glacial drift, and the surface is rolling or hilly, with many lakes, ponds, and marshes. Elsewhere the plains of the Soviet Union are more nearly level, and in places they are very flat. *See Figure 330.*

A sunken sea. What does the map on page 325 show about the level of the Caspian Sea? What does it show about the elevation of much of the land bordering that sea? The Caspian Sea and Lake Aral, farther east, have no outlets. Because of this, they are much saltier than the Black Sea, for all the salts which the rivers bring to them are left behind as the water evaporates from their surfaces. What great lake in the United States has become very salty because it has no outlet?

Higher and rougher lands. On the upper map on page 324 find the mountainous regions of the Soviet Union. Notice that the Ural Mountains and the Caucasus Mountains form parts of the natural boundary between Europe and Asia. The young, rugged Caucasus Mountains are higher than the Alps, and their

"U. S. Official" Photograph

Figure 331. A winter scene in the north-central part of European Russia. For many months the snow lies deep on the ground, and in the places where there are no railroads, sledges and sleighs are the only means of transportation and travel.

summits are covered with ice and snow the year round. The old, worn-down Urals are much lower, and they do not form a serious barrier to travel and transportation between the plains of Europe and the plains of Siberia.

The map shows that the largest stretches of mountains, uplands, and plateaus in the Soviet Union are in the far eastern part of the country. There you will find young mountains and old mountains, and the great stretch of uplands and plateaus known as the East Siberian Uplands. These regions are mostly a forested wilderness, and are thinly populated.

Some differences in temperature. As you would expect in such a huge country, there are great differences in climate within the Soviet Union. The very fact that the country extends from the Arctic Ocean to the parallel of 35° north latitude (the latitude of Memphis, Tennessee) means that there are great differences in temperature and length of growing season from north to south.

Furthermore, Eurasia is such an enormous mass of land that the interior becomes very cold in winter and very warm in summer. The basin of the Lena River in Siberia has the coldest winters of any inhabited part of the world, and it is not uncommon for the temperature to drop to 50° F. or 60° F. below zero there. Yet in the summer this same region often has temperatures well above 70° F.

In the European part of the Soviet Union the extremes of temperature are somewhat less, but even so, the winters are very cold and the summers often very warm. At Moscow, for example, the temperature often drops below zero in winter, and rises above 80° F. in summer. *See Figure 331.*

Some differences in rainfall. Turn to Figure 112 (p. 119) and study the distribution of rainfall in the Soviet Union. What parts of the country have over 20 inches of rain a year? Judging from the rainfall, which one of the three regions of plains do you think is best suited to farming?

The map shows that vast stretches of the Soviet Union have less than 20 inches of rain. The lands which have less than 10 inches are deserts or semi-deserts, where farming can be carried on only by irrigation. Fortunately, many parts of the lands which have between 10 and 20 inches of rainfall receive much of their rain in the spring or early summer. For this reason they are well suited to the growth of spring-sown wheat and other grains, which need moisture during the early part of the growing season and dry weather during the period when they are ripening.

The rivers and their use. On the upper map on page 324 find the following rivers of the Soviet Union: Dnieper (*C4*), Don (*D4*), Volga (*D4*), Dvina (*D2*), Ob (*F–G2*), Yenisei (*H2*), and Lena (*M2*). Name the body of water into which each one flows.

As in many countries of Europe, so in the Soviet Union, the rivers have long been important routes of travel and transportation. Unfortunately, however, they cannot be used for navigation all the year round, for they are frozen over from three to six or more months every year, according to their location. Another handicap to the use of some of the rivers for commercial navigation is that they flow northward to the Arctic Ocean, which is closed by ice most of the year. *See Figure 332.*

Figure 332. Loading barges on the Don River with bags of grain. After the harvest season in European Russia, much grain is sent in barges down the southward-flowing rivers to ports on the Black Sea for shipment to other countries of Europe.

The rivers that are used most for the transportation of goods for export are those which flow southward to the Black Sea. Can you explain why? The Volga, which is the longest river of European Russia, is used extensively for travel and transportation between the cities and towns along its banks, but it is of little importance in the transportation of goods for export. Give a reason for this.

Disadvantages of the coast line. Although the Soviet Union borders the Arctic Ocean, the Pacific Ocean, the Black Sea, and the Baltic Sea, its coast line provides few good outlets to the great ocean trade routes. The thousands of miles of ice-bound Arctic coast are almost useless. Leningrad and Vladivostok are located at the southernmost points on the western and eastern coasts; but, even so, they are so far north that if ice-breakers were not used their harbors would be closed for at least four months during the winter.

The most useful outlet of the Union is the short coast line on the Black Sea, but even there cold winds from central Asia in the winter cause the harbors to freeze over for about two months, and ice-breakers must be used to keep them open.

Some things to do. 1. Use the lists on pages 378–379 to make the following comparisons:

a. Compare European Russia in size with France, the largest of the countries which lie wholly in Europe.

b. Compare the Asiatic part of the Soviet Union in size with the Chinese Republic, the largest of the countries which lie wholly in Asia.

2. Find out the average temperatures for January and July where you live. Compare these temperatures with those in central Siberia.

3. Use the map on page 325 to show how goods may be transported by water from

a. Nizhni Novgorod (*H3*) to Leningrad (*F3*), on the Gulf of Finland.

b. Nizhni Novgorod to Astrakhan (*J5*), on the Caspian Sea.

c. Kiev (*F4*) to Warsaw (*D4*), and the Free City of Danzig (*C4*).

Special credit work. 1. Find out all you can about the building of the Trans-Siberian railroad and report to your class on it.

2. Make some graphs comparing the Union of Soviet Socialist Republics in size and population with the Chinese Republic, Canada, Brazil, and the United States.

Figure 333. A herd of reindeer in the tundra of northern Europe. The reindeer have sharp hoofs with which they can dig down through the snow and get at the grass buried beneath it. The men who own the herd shown in the picture are Lapps who wander over northern Finland and the adjoining part of Russia.

II. WORK IN THE GREAT BELTS OF THE SOVIET UNION

Foreword. The upper map on page 324 shows that the Soviet Union may be divided into four great vegetation belts. The two northern belts are the tundra and the taiga, which run all the way across this vast country. Farther south is the grassland, which extends only part way across the country. Still farther south is the belt of steppe and desert, which grows drier and drier from north to south.

Make a list of these four belts of the Soviet Union. Then, with the help of the lower map on page 324 and the map on page 325, write opposite the name of each belt the kinds of work that you think are most important there. Keep this list and add to it as you study this chapter.

The Tundra

The Far North of Eurasia. When you were studying North America, you learned about the cold, frozen tundra of the Far North. What did you learn about the people of that region of North America and the ways in which they make their living?

Eurasia too has its tundra, and this region forms the northernmost belt of the Soviet Union. The upper map on page 324 shows that the tundra borders the Arctic Ocean all the way from Finland to Bering Strait. How should you describe the surface of the land in most of this region?

There are but two seasons in the tundra: a long, dark winter when the temperatures are far below zero, and a short, warm summer of almost unbroken daylight. After the snow disappears in the spring the ground thaws, but the melting extends less than two feet below the surface.

The tundra is overgrown with mosses, lichens, and many small shrubs which are dwarfed in their growth because the weather is so bitterly cold most of the year. Even full-grown trees are seldom more than two feet high in this cold region, and many are less than a foot in height. During the short summer berries are plentiful, and many bright-colored flowers bloom for a few weeks.

Reindeer-herders. The few people who live in the tundra of the Soviet Union are nomads

From Ewing Galloway, N. Y.

Figure 334. A Russian peasant woman at the door of her house, in the part of the taiga of European Russia where most of the land has been cleared for farming. Of what material is the house built, and why?

who have herds of reindeer. In the western part of European Russia these wandering people are Lapps like those in northern Finland, Sweden, and Norway. In the eastern part of European Russia and in western Siberia are the Samoyedes and Ostyaks, and in the eastern part of the tundra of Siberia are the Yakuts. All these groups of people live chiefly on reindeer milk and meat, though they also catch fish and birds and gather berries. During the summer they follow their bands of reindeer to the shores of the Arctic Ocean. As the cold weather approaches, they move southward to the margin of the forest belt, where they live in little huts of rocks or wood covered with sod during the coldest months of the winter. *See Figure 333.*

The Taiga

One of the greatest forests in the world. Bordering the tundra on the south is the taiga, which is one of the greatest forests in the world. The forests of Scandinavia, Finland, and the Baltic Sea countries form the westernmost part of this belt, and it stretches all the way across the Soviet Union to the Pacific Ocean. The trees in the northern part of the taiga are mostly evergreen softwoods, while those farther south are mixed hardwoods and softwoods.

Lumbering and farming in the taiga of European Russia. The upper map on page 324 shows that the taiga covers half or more of the European part of the Soviet Union. South of the parallel of 60° much of the land has been cleared for farming, but north of that line the climate is so cool that but little farming is carried on.

In the sections where much land has been cleared the farmers raise large quantities of rye, oats, flax, and potatoes. These crops, as you know from your study of the United States and Canada, grow well in cool temperate lands because they do not need a long growing season. Many of the farmers in this part of the Soviet Union keep cattle and various other kinds of live stock, but in the region as a whole the raising of crops, especially grain and flax, is the most important kind of work. *See Figures 334 and 335.*

Figure 335. Peasant women harvesting grain on cleared land in the taiga of European Russia. Some of the Russian peasants have farming machinery, but on many farms much of the work is done by hand.

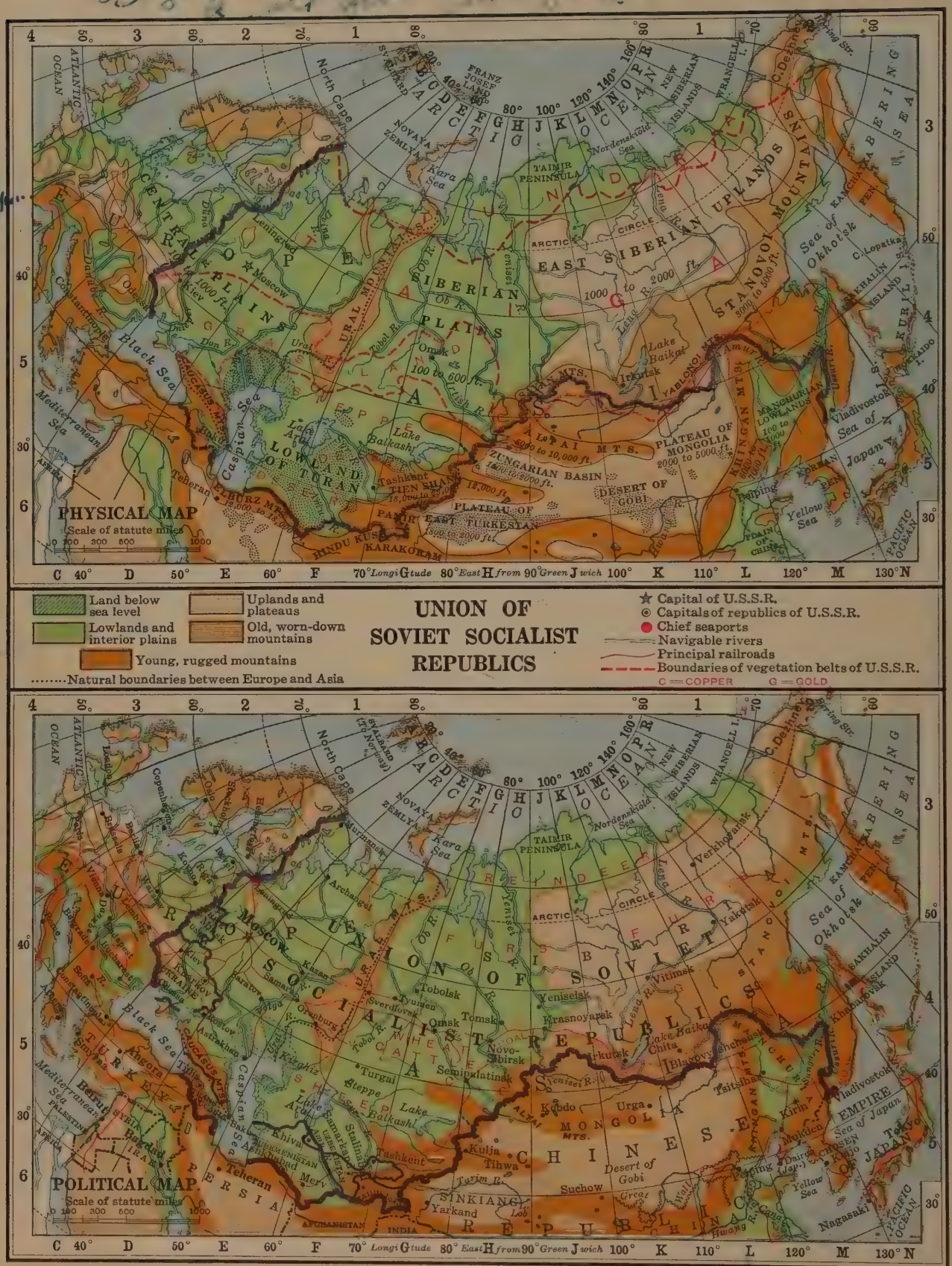
PHYSICAL MAP
Scale of statute miles
0 100 300 500 1000
POLITICAL MAP
Scale of statute miles
0 100 300 500 1000
Land below sea level
Lowlands and interior plains
Young, rugged mountains
Uplands and plateaus
Old, worn-down mountains
.....Natural boundaries between Europe and Asia
UNION OF SOVIET SOCIALIST REPUBLICS
Capital of U.S.S.R.
Capitals of republics of U.S.S.R.
Chief seaports
Navigable rivers
Principal railroads
Boundaries of vegetation belts of U.S.S.R.
C = COPPER G = GOLD
C 40° D 50° E 60° F 70° Longitude 80° East H from 90° Greenwich 100° K 110° L 120° M 130° N
EUROPEAN RUSSIA
CENTRAL PLAIN
SIBERIAN PLAINS
EAST SIBERIAN UPLANDS
STANOVOI MTS.
KHINGAN MTS.
YABLONOI MTS.
URAL MTS.
ALTAI MTS.
CAUCASUS MTS.
ELBURZ MTS.
HINDU KUSH
KARAKORAM
PAMIR
TIEN SHAN
PLATEAU OF MONGOLIA
ZUNGARIAN BASIN
DESERT OF GOBI
PLATEAU OF TIBET
LOWLAND OF TURAN
MANCHURIAN LOWLANDS
PLAIN OF CHINA
KAMCHATKA PEN.
SAKHALIN ISLAND
KURILE IS.
TAIMIR PENINSULA
NOVAYA ZEMLYA
FRANZ JOSEF LAND
NEW SIBERIAN ISLANDS
WRANGELL I.
ARCTIC CIRCLE
Kara Sea
Nordenskiöld Sea
Sea of Okhotsk
Sea of Japan
Yellow Sea
Black Sea
Caspian Sea
Mediterranean Sea
Lake Baikal
Lake Balkash
Lake Aral
Bering Str.
C. Dezhnev
C. Lopatka
Moscow
Leningrad
Kiev
Odessa
Constantinople
Tashkent
Omsk
Irkutsk
Vladivostok
Peiping
Teheran
Archangel
Murmansk
Yakutsk
Verkhoyansk
Vitimsk
Yeniseisk
Krasnoyarsk
Tobolsk
Tomsk
Novo-Sibirsk
Semipalatinsk
Turgai Steppe
Kirghiz Steppe
Khiva
Merv
Kulja
Tihwa
Suchow
Yarkand
Urga
Kobdo
Chita
Blagovyshchensk
Khabarovsk
Nikolaevsk
Mukden
Kirin
Hsinking
Jehol
Tsitsihar
Nagasaki
Tokyo
Yokohama
Osaka
Kyoto
Hwang R.
Yangtze R.
Lena R.
Yenisei R.
Ob R.
Irtish R.
Amur R.
Volga R.
Don R.
Dnieper R.
Dniester R.
Danube R.
Vistula R.
Oder R.
Elbe R.
Rhine R.
Seine R.
Loire R.
Ebro R.
Tagus R.
Po R.
Tiber R.
Rhone R.
Tarim R.
Tobol R.
Ural R.
Kama R.
Oka R.
Dvina R.
Pechora R.
Onega L.
Ladoga L.
Vänern L.
Vättern L.
Wener L.
Geneva L.
Constance L.
Lucerne L.
Como L.
Garda L.
Maggiore L.
Trasimene L.
Albufera L.
Aral Sea
Lake Balkash
Lake Baikal
Lake Aral
Caspian Sea
Black Sea
Mediterranean Sea
Yellow Sea
Sea of Okhotsk
Sea of Japan
Bering Sea
Arctic Ocean
Atlantic Ocean
Pacific Ocean
Indian Ocean
Persian Gulf
Red Sea
Gulf of Aden
Gulf of Oman
Gulf of Suez
Gulf of Aqaba
Gulf of Akaba
Gulf of Finland
Gulf of Bothnia
Gulf of Riga
Gulf of Archangel
Gulf of Obi
Gulf of Penzhina
Gulf of Anadyr
Gulf of Alaska
Gulf of Mexico
Gulf of Guin

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Figure 336. A view of Moscow, looking toward the Kremlin, or inner city, which is surrounded by a wall. Within the Kremlin are many beautiful buildings, some of which are used as the offices of the central government of the Soviet Union.

Lumbering is important in many places in the European part of the Russian taiga. Large numbers of trees are cut for lumber and pulp wood, and the logs are sent to sawmills and pulp and paper mills located on the streams. Like the countries farther west in the taiga, European Russia plays an important part in supplying the more densely populated countries of western Europe with lumber and pulp wood.

Mining in the Urals. From the map on page 325 name five different mineral products of the Ural Mountains. The central part of these mountains is an important mining section, and the iron ore mined there is used in the manufacture of iron and steel in several of the cities of the region. The platinum mines in the Urals make the Soviet Union one of the two leading countries of the world in the production of this valuable metal. The other great platinum-mining country is in South America. Can you name it?

The Moscow industrial district. On the map on page 325 find Moscow (Moskva), the capital of the Soviet Union (*G3*). Notice that it is located in the central part of European Russia within easy reach of navigable rivers which flow north, south, east, and west. The upper map on page 324 shows that Moscow is located near the southern margin of the taiga, and the lower map shows that it is the "hub" of the railroad system of European Russia. *See Figure 336.*

Moscow has over two million people and is the fourth largest city in Europe. Only London, Berlin, and Paris are larger. Long ago, when Moscow began its growth, the forest provided protection for the people as well as wood for fuel and building, and the rivers provided means of carrying on trade. Today most of the land around Moscow has been cleared for farming, and trade is carried on chiefly by means of the railroads which spread out from the capital city like the spokes of a great wheel.

Moscow is the center of a densely populated area which is one of the two leading industrial districts of the Soviet Union. Turn to the map on page 325 and find the districts south of Moscow where coal and iron ore are mined. These mining districts and the one in the Urals supply Moscow with coal, and with iron and steel which are used in the manufacture of many kinds of machinery and other iron and steel products.

Moscow also has large textile mills where cotton, woolen, and linen goods are made, and many factories where shoes and other leather goods are manufactured. So important are these industries that they require large imports of cotton, wool, hides, and skins from other lands. Flax for the linen mills comes from the flax-growing region farther north in the taiga.

Leningrad — the gateway to the Baltic. Figure 337 is a picture of Leningrad, the second largest city of the Soviet Union. After you have studied the picture, find Leningrad on the map on page 325 (*F3*). At the head of what gulf is it located? What did you learn about this port on page 321?

Figure 337. Part of the city of Leningrad, European Russia's only gateway to the Baltic Sea, and the second largest city of the Soviet Union. This city used to be called Petrograd.

Leningrad was founded long ago by a Russian czar so that his country might have a port on the Baltic Sea, and for many years it was the capital of the Russian Empire. During those years it grew to be a large city, and the government helped to establish shipbuilding and other industries there. Never, however, has it been so important as Moscow as a manufacturing city, owing chiefly to its greater distance from Russian sources of coal and iron ore.

Leningrad is chiefly an ocean gateway for the taiga of European Russia, and therefore its leading exports are lumber, grain, and flax. Among its imports raw cotton holds a high place. Can you explain why?

Arctic ports. Some of the lumber of the taiga is shipped from the arctic ports of Archangel and Murmansk. The harbor of Archangel is icebound half the year, but the harbor of Murmansk is ice-free because of a warm current from the Gulf Stream Drift.

The Siberian taiga. Most of the Siberian part of the taiga is a thinly populated wilderness. Except in the extreme south there are no railroads, and towns are few and far between. Besides the forests, which are almost unbroken from the Urals to the Pacific Ocean, there is a wealth of coal and metal ores in the eastern part of the region. At present, however, there is but a little lumbering, and only in a few places is mining of any importance. Not until railroads are built to connect this vast forest with the outside world will its resources be developed to any great extent.

At present the most valuable mineral product of the Siberian taiga is the gold which is obtained by placer mining along some of the streams. Find the gold-mining centers on the lower map on page 324. Find also the coal mines near the Trans-Siberian Railroad. The coal from these mines is used chiefly by the railroad locomotives.

Fur-trapping. The most valuable products of the Siberian taiga are the furs which are obtained by men who hunt and trap the wild animals which live in the forest. The hunters and trappers live in little settlements along the streams, and they kill large numbers of squirrels, hares, foxes, ermines, marmots, and other animals in the winter when the fur is thickest. In the summer traders come to the settlements in boats, and the hunters exchange their winter's "catch" of furs for food supplies, clothing, and other things that they need.

A far eastern port. On the lower map on page 324 find Vladivostok (*N4*). This city is the far eastern seaport of the Soviet Union, and it owes its growth chiefly to the fact that it is the eastern terminus of the Trans-Siberian

Photograph from Ewing Galloway, N.Y.

Figure 338. Threshing wheat in the grassland of European Russia. This is one of the world's greatest wheat-growing regions, and it is the part of the Soviet Union where the largest numbers of farmers use modern machinery in their work. The threshing machine shown in the picture was made in the United States.

Railroad. Since the most densely populated and most productive part of the Soviet Union is in Europe, and since Soviet trade is largely with other countries of that continent, the export and import trade of Vladivostok is much less than that of Leningrad.

Giving reasons. Complete each sentence below by giving reasons for the fact which it states.

1. The tundra of Eurasia is very thinly populated because _____.
2. Much more land has been cleared for farming in the southern part of the taiga of European Russia than in the northern part because _____.
3. Rye, oats, and flax are the leading crops of the taiga of European Russia because _____.
4. Far more lumbering is carried on in the taiga of European Russia than in the taiga of Siberia because _____.
5. The central portion of the Ural Mountains is well populated because _____.
6. Moscow is an important manufacturing center because _____.
7. The leading exports of Leningrad are lumber, grain, and flax because _____.
8. Leningrad is a less important manufacturing center than Moscow because _____.
9. Vladivostok is a less important seaport than Leningrad because _____.

The Grassland

A rich farming region. South of the taiga in European Russia and western Siberia is a region much like our prairies, for it is a rich grassland with trees only along the streams. From the upper map on page 324 what can you say about the surface of most of this grassland?

This belt includes most of the famous "black soil" region, and its deep, dark soils are wonderfully fertile. The rainfall is rather light, but fortunately much of it comes in the summer. Because of the climate, the fertile soils, and the level surface, this grassland is the best farming region of the Soviet Union. *See Figure 338.*

The farmers and their work. The farms will remind you of the plains of the Dakotas and the neighboring provinces of Canada, for the farmers raise immense crops of spring wheat and barley, and large quantities of rye, oats, and flax. Wheat is by far the most important money crop, and so many millions of bushels are grown each year that the Soviet Union stands second only to the United States in wheat production. In the western part of the grassland, in the Soviet Republic of

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Figure 339. A farmyard in Ukraine. Notice the ears of corn on the ground and on the pole hung from the eaves of the house. Why is this farmhouse built of different materials from the house shown in Figure 334?

Ukraine, sugar beets and tobacco are very important crops, and in the extreme southwest considerable quantities of corn are grown. *See Figure 339.*

The maps on page 324 show that the Trans-Siberian Railroad passes through the Siberian grassland. By providing a means of shipping farm products to markets in European Russia the railroad has helped greatly in the settlement of this part of Siberia. In addition to raising wheat and other grains, many of the Siberian farmers raise cattle, and some specialize in dairying. The dairy farmers have coöperative creameries where butter is made and sent to European Russia. From there part of the butter is exported, chiefly to Germany and Great Britain.

Of all the farmers in the Soviet Union, those of the grassland are the most prosperous. Their prosperity is due partly to the richness of the land and partly to the fact that many of them use modern farming machinery.

Coal and iron in Ukraine. About three fourths of all the coal and two thirds of all the iron ore produced in the Soviet Union are mined in southern Ukraine. Find the mining centers of this part of the country on the map on page 325, and name another metal ore besides iron which is found there.

The mines of Ukraine supply the only coal in European Russia which is suitable for coking. Because of this and because iron ore and manganese are also abundant in the region, southern Ukraine has become the chief iron-and-steel manufacturing section of the Soviet Union. *See Figure 340.*

Cities and towns of the grassland. All the cities and larger towns of the grassland are market centers for the surrounding farm lands. Chief among them is Kiev, the third largest city of the Soviet Union. Find Kiev on the map on page 325 (*F4*) and notice its location with reference to the coal fields to the northeast and southeast.

As you would expect from its location in a prosperous farming region within easy reach of coal mines, Kiev has become a manufacturing center. Among its industries flour-milling,

Figure 340. One of the open pits from which iron ore is mined in Ukraine. The ore is dug by hand and is loaded in horse-drawn carts which carry it to cars on the nearest railroad.

Figure 341. A view in the oil fields near Baku. The production of oil in the Soviet Union is controlled by the government, and the drilling, pumping, and refining are done in modern ways. Great Britain, Italy, and France take more than half the exports of mineral oils from the Soviet Union. Can you explain why?

sugar-refining, and tobacco-manufacturing are especially important. Can you explain why?

The largest city of the Siberian portion of the grassland is Omsk, on the Trans-Siberian Railroad. It is a busy market center where grain and butter from the Siberian farm lands are collected for shipment to European Russia, and from which manufactured goods and other supplies received by railroad are distributed to the farming villages.

Ports on the Black Sea. Turn to the map on page 325 again and name the ports of the Soviet Union on the Black Sea. The largest of these ports is Odessa, which has long been an important shipping point for Russian wheat. Nikolaev and Kherson share the grain trade with Odessa, and all three cities are important flour-milling centers. As you would expect, the exports of wheat from these seaports go chiefly to the industrial countries of Europe which find it necessary to import foodstuffs.

The Caucasus Region

A mountain and valley region. Between the Black Sea and the Caspian Sea the Caucasus Mountains rise more than 10,000 feet above the bordering plain. South of the Caucasus are other mountain ranges which stretch westward into Anatolia and eastward into Persia. Within this mountainous region of the Soviet Union are many fertile valleys where the people raise grain, fruits, and tobacco, and keep cattle, sheep, and goats. The region also has much mineral wealth. Name its mineral products from the map on page 325.

Some rich oil fields. By far the most valuable mineral product of the Caucasus region is the petroleum from the rich oil fields near Baku on the Caspian Sea, and from other fields on the northern margin of the mountains. On the map on page 325 find Baku (*J6*) and Batum (*H6*). Then study Figure 341.

Figure 342. Goats grazing on the poor grass on the Kirghiz Steppe. The wealth of the Kirghiz families is measured by the number of animals which they own. Why is life somewhat easier for these nomads of the steppe than it is for the nomads of the arctic tundra? Why do they keep a greater variety of animals?

At Baku there are large oil refineries from which kerosene and gasoline are sent to various parts of European Russia and southwestern Siberia, and which supply the boats which run on the Caspian Sea and the Volga River with fuel oil. Through a pipe line which runs from Baku to Batum, on the Black Sea, large quantities of crude petroleum are pumped for export to the countries of western Europe. So productive are the oil fields of the Caucasus region that the Soviet Union stands next to the United States and Mexico in the production of petroleum.

The Steppe and the Desert

A land of nomads. South of the grassland, and extending from the Caspian Sea to the mountains of central Asia, is the steppe, a belt of poor grassland where the rainfall is too little for farming. This is a land of nomadic peoples, among whom the Kirghiz are most numerous.

The Kirghiz live in tents and have very little property except their horses, cattle, camels, sheep, and goats. They want little but the food and clothing needed from day to day because they have to move so often in search of fresh pastures for their flocks and herds. They depend so largely on their animals that if there is an unusually dry season, when grass is scarce and many of the animals die, they suffer greatly. *See Figure 342.*

The desert of Turan. South of the Kirghiz Steppe there is a desert region where the rainfall is too little even for the growth of grass. Find this region on the upper map on page 324. In what lowland is it located? Fortunately, the mountains on the east receive more rain, and streams from these mountains provide water for irrigation in the southeastern part of the lowland.

Work in the irrigated lands. In the irrigated lands the people have long raised grain, fruit, and vegetables. More recently they have added cotton to their list of crops, for the Lowland of Turan is far enough south to have a long growing season. The Soviet government is encouraging cotton-growing, hoping that in time these irrigated lands may help considerably in providing the industrial cities of European Russia with raw cotton.

Mulberry trees grow well in this southern region, and the raising of silkworms is important in certain places. Many of the people are skillful in the weaving of silk goods and

the making of silk embroideries. Others are rug-makers, using for this work wool from sheep which are raised in the region. In the bazaars of the old cities of Tashkent and Samarkand large quantities of these products of the hand loom and the needle are offered for sale.

On the lower map on page 324 find the railroad which connects the cities named above with Moscow. Before this railroad was built, the people of this southernmost part of the Soviet Union carried on trade and received news from the outside world only by means of slow-moving camel caravans.

Transportation and Trade in the Soviet Union

Transportation within the country. The Soviet Union is such a huge country that the problem of providing means of transportation between all the various sections is a serious one. The lower map on page 324 shows that the European part of the country is well supplied with railroads which connect all the larger interior cities with one another, with the seaports, and with the countries farther west in Europe.

In addition to the railroads of European Russia, there are the many navigable rivers which serve as highways of transportation during the months when they are not frozen over. The map on page 325 will show you that canals have been built to connect the different river systems, providing almost unbroken waterways between the Baltic Sea and the Black and Caspian seas.

Conditions in the Asiatic part of the Union are quite different. The greater part of this vast section of the country is without railroads, and therefore the rivers must serve as the chief highways of transportation. But the longest rivers all flow northward to the ice-bound Arctic Ocean, and even their upper courses, in the south, are frozen from five to six months in the year. Lack of good means of transportation is the chief reason why the resources of Siberia are so largely unused.

Trade within the country. For the most part trade between the different sections of European Russia is carried on in modern ways, the larger railroad centers and river ports serving as places of business and exchange. Until recently the people in some parts of the country followed an old custom of holding yearly fairs for the buying and selling of goods. The greatest of these fairs was the one held each year from July to September at Nizhni Novgorod on the Volga River. During the fair not only Russian merchants, but merchants from Siberia, Persia, and even China, offered goods for sale and exchange. The Soviet government has decided that this fair shall no longer be held, but Nizhni Novgorod, because of its location, will probably continue to be an important center of trade.

Foreign trade. Since the Soviet Union is so largely an agricultural country, it is not surprising to find that among the exports farm products are very important, especially wheat, butter, eggs, and flax. The most valuable single items among the exports are, however, furs, mineral oils, and lumber. The exports go largely to the countries of western Europe, especially to Germany and Great Britain.

Among the imports, raw cotton holds first place, for the making of cotton goods is one of the leading manufacturing industries of the Soviet Union. The greater part of the raw cotton comes from the United States. Other raw materials which are imported in large quantities are wool, hides and skins, and rubber. Farming machinery, factory machinery, and iron and steel goods are also imported, showing that the Russian iron-and-steel industry does not fully supply the needs of the people. These imports come chiefly from Germany and the United States. Tea, chiefly from China, is also a valuable import, for the Russians are great tea-drinkers.

An occupational test. This test will help you to review what you have learned about the occupations of the people in the various parts of the Soviet Union.

1. The belt of cold, frozen plains in the northern part of the Soviet Union is called the TUNDRA. The few people who live there make their living by keeping herds of REINDEER. They are wandering people, or NOMADS, because _____.

2. South of the _____ is the great belt of forests known as the _____. In the European part of the _____ large numbers of trees are cut for _____ and _____ _____. Much less lumbering is carried on in the Siberian part of the _____ because _____.

3. In the Siberian part of the taiga the trapping of wild _____ for their _____ is an important kind of work. The mining of _____ and _____ is also important in certain places in this part of the taiga. _____ is mined chiefly for use on the _____ Railroad.

4. There are a number of important mining centers in the central portion of the _____ Mountains. This region makes the Soviet Union one of the two leading countries of the world in the production of _____. It has iron-and-steel plants because _____.

5. The best farming land in the Soviet Union is in the belt of _____, south of the western portion of the taiga, because _____. The leading money crop of this belt is _____. An important export product of the Siberian part of this belt is _____.

6. Extending from the Black Sea to the Caspian Sea are the _____ Mountains. In and near these mountains large quantities of _____ are obtained from beneath the ground.

7. The poor grassland extending eastward from the Caspian Sea is called the _____. The people of this region are _____ who live wandering lives because _____.

8. South of the steppe is a _____ region, too dry for the growth of grass. This region has very FEW people except in the southeast, where streams provide _____ for _____. On the _____ lands the people raise many different _____. The Soviet government is encouraging the people of this part of the country to raise _____ because _____.

Some things to explain. Explain why

1. There are great differences in temperature and length of growing season in the Soviet Union.
2. The winter weather is much colder in Moscow than in Paris.
3. The long coast line of the Soviet Union on the Arctic Ocean is of little use to the people of the country.
4. The most useful coast line of the Soviet Union is the short one on the Black Sea.
5. The rivers of the Soviet Union cannot be used for navigation for as many months in the year as the rivers of France and Germany.
6. The waters of the Caspian Sea are salty.

Naming cities. Name each of the cities of the Soviet Union described below:

1. The capital of the Soviet Union.
2. The seaport on the Gulf of Finland.
3. The far eastern port of the Union.
4. The largest city of the European portion of the grassland.
5. The largest city of the Siberian portion of the grassland.
6. Three ports on the Black Sea from which much wheat is exported.
7. The city on the shore of the Caspian Sea which is an oil-refining center.
8. The port on the Black Sea from which mineral oils are exported.

Finding reminders. Use the map on page 325 to show where in European Russia each person described below would find something to remind him of home.

1. A lumberman from our state of Washington.
2. A wheat-farmer from North Dakota.
3. A tobacco-grower from Kentucky.
4. A sugar-beet grower from Michigan.
5. A coal-miner from southern Illinois.
6. A potato-grower from Maine.
7. An "oil man" from Oklahoma.
8. An iron-miner from Minnesota.

By Burton Holmes from Ewing Galloway

Figure 343. A canal in Bangkok. Many of the houses in Bangkok face canals instead of streets, and the people often use boats to get from place to place. The small boats with the arched coverings of straw matting, such as you see in the picture, are called sampans, and are common in all parts of the Orient.

INDEPENDENT COUNTRIES OF THE ORIENT

I. THE KINGDOM OF SIAM

Foreword. East of India and south of the far eastern part of Siberia is the part of Asia which we call the Orient. In the Orient there are three independent countries: the Chinese Republic, the Empire of Japan, and the Kingdom of Siam. Find these countries on the map on page 343. Which one is the largest? Which one is an island empire? Which one lies between the British land of Burma and the French colony of Indo-China? Which one is a tropical country?

Turn to page 119 and find Siam on Figures 112 and 113. What can you say about its rainfall? about the density of its population compared with that of India and China? Like India, Siam is a monsoon land. At what season, then, does it have heavy rains?

Now find Siam on the map of the Far East on page 346. What is the leading crop of the country? What "climate reasons" can you give for this fact? Judging from the products shown on the map, what other kinds of work besides farming do you think are important in Siam?

Progressive rulers. Several members of the royal family of Siam have visited western Europe, and some of the princes have been educated in England and America. In this way they have become acquainted with Western ways of doing work. In recent years they have employed British, French, and American advisers to help them to introduce modern methods of farming, lumbering, and mining into their country. Thus Siam is making good progress in the development of its resources.

A rice-growing country. The map on page 346 shows that there are mountains along the northern and western borders of Siam, but that most of the country lies in a lowland region which it shares with French Indo-China. The lowland, with its year-round warmth and its monsoon rains, is well suited to the raising of rice, and in Siam, as in French Indo-China, rice is by far the most important crop. The people depend on rice as their chief foodstuff, but they raise so much that they have a large surplus to export to the more densely populated lands of China, Japan, and Java.

The people raise other tropical crops, but none of them compares in importance with rice. In the part of Siam which extends into the Malay Peninsula rubber plantations have been started, and the exports of rubber are growing in importance.

Forest work. As you would expect, there are thick, tropical forests in this warm, moist country, and, like the forests of Burma and French Indo-China, they contain valuable teak trees. Large numbers of teakwood logs are cut in the forests, and elephants are used to carry them to the Menam River. The logs are too heavy to float, and so they are loaded on bamboo rafts to be sent downstream for export. *See Figure 344.*

Mineral wealth. Siam is fortunate in having coal and valuable ores of tin, zinc, iron, and other metals. Modern methods of mining are being introduced, and greater use of the

By Ewing Galloway, N.Y.

Figure 344. Teakwood logs in the Menam River in Siam. Some of the men in charge of floating the logs downstream live in little huts on the rafts.

mineral resources will certainly be made in the future. At present the most important mineral product is tin, which ranks next to rice among the exports of Siam. You will recall that the richest tin mines of the world are in the part of the Malay Peninsula which is under British control. Where in Siam, then, do you think the tin mines are located? Check your answer by the map on page 346.

Bangkok. Figure 343 is a picture taken in Bangkok, the capital, the largest city, and the seaport of Siam. Find Bangkok on the map on page 346 (*B5*). Near the mouth of what river is it located? What reason can you give for the fact that this city has many mills for cleaning and polishing rice?

Although Bangkok is the seaport of Siam, large ocean ships do not go upstream to its wharves because the mouth of the Menam River is too shallow. Instead, they anchor as near the mouth of the river as possible, and their cargoes are transferred to smaller boats. The smaller boats carry the goods up to Bangkok and come back loaded with rice and other Siamese products for the ships to carry away. Because of this handicap to shipping, some of the trade of Siam with distant lands is carried

on through the great British port of Singapore. In what two ways may goods be sent back and forth between Bangkok and Singapore? What are the leading imports of Siam, and where do they come from?

A summary. The countries of southern Asia and the Orient which you have studied thus far are India and Burma, Ceylon, British Malaya, the Dutch East Indies, Siam, and French Indo-China. Summarize some of the important facts about these countries by completing the sentences in the next column.

1. Among these countries ____ is the only one which is independent. The others belong to countries in _____.
2. In all these countries ____ is the chief grain crop and the chief foodstuff of the people.
3. The leading forest product of Burma, Siam, and French Indo-China is ____.
4. The important raw material produced on plantations in British Malaya, Ceylon, the Dutch East Indies, and Siam is _____.
5. The metal ore mined in the Malay Peninsula and shipped to many parts of the world is ___.

II. THE EMPIRE OF JAPAN

1. Foreword

An island people. Thousands of years ago some of the people who lived in the land which we call China traveled eastward and settled in the peninsula of Korea, or Chosen. Others traveled eastward from China and Korea in small boats, and settled in the islands which we now call Japan. For many hundreds of years the island people of Japan lived by themselves, knowing little or nothing of other nations. Thus they came to have many customs quite different from those of the Koreans and of the Chinese.

All three of these groups of people, however,— the Japanese, the Koreans, and the Chinese,— belong to the Mongolian, or yellow, race, and they are more like one another than like any other nations in the world. We call them the Oriental, or Eastern, peoples. We also speak of the Oriental civilization, which differs in many ways from the Western civilization of Europe and the Americas.

The opening-up of Japan to trade. In 1854 the United States sent a fleet to Japan to make a commercial treaty, or agreement, so that trade between the two countries might be carried on. This, and other treaties with other countries, opened up Japan to world trade, and was the beginning of a period of growth for the Japanese which has made them one of the leading nations of the world today.

Our interest in Japan. Almost everybody in the United States has now become somewhat acquainted with Japan. The Japanese export more raw silk than any other people in the world, and our merchants buy vast quantities of it. We, in turn, sell more dollars' worth of our exports to Japan than to any other country of Asia. In all our larger cities there are Japanese shops where toys, trinkets, china, pottery, and many other things made in Japan are sold, and in our art galleries and museums many beautiful objects of art from Japan are displayed.

Many Japanese young people come to this country to study in our colleges and universities, and many Japanese-American friendships are made in this way. Each year more and more Americans visit Japan, many simply to enjoy the beauty of the country, and others to transact business or to study the life and work of the Japanese people.

Some years ago the Japanese sent as a present to the people of the United States a number of their cherry trees. Those trees were planted on the banks of the Potomac River in our capital city of Washington, and each spring, when they are pink with blossoms, they serve as a beautiful reminder of Japan.

A problem to solve. As you study this section, find reasons why Japan, which less than a hundred years ago was almost unknown to the Western nations, is one of the most important countries in the world today. In solving this problem you will find it helpful to compare the Japanese islands and their resources with the British Isles and their resources. As you do so, see if you can discover any truth in the saying that "Japan is becoming the Britain of the Orient."

Courtesy of Canadian Pacific Steamships

Figure 345. Fujiyama, thought by many people to be the most beautiful mountain peak in the world. It rises to a height of more than 12,000 feet above the sea, and its summit is usually covered with snow. To the Japanese, Fujiyama is a sacred mountain.

2. Japan Proper

Map studies. Begin your study of Japan by working out the following map studies.

1. Turn to the map of Eurasia on page 343 and find Cape Lopatka, the southernmost point of the Kamchatka Peninsula of eastern Asia (*O3*). With your finger trace the purple line which starts at that cape and runs westward and southward, curving around the southern end of Taiwan. All the lands on the Pacific side of that line are parts of the Empire of Japan.

2. What part of the mainland of Asia belongs to the Japanese? 3. What island farther north is divided politically between Japan and the Soviet Union? 4. Through what island belonging to the Japanese does the tropic of Cancer pass?

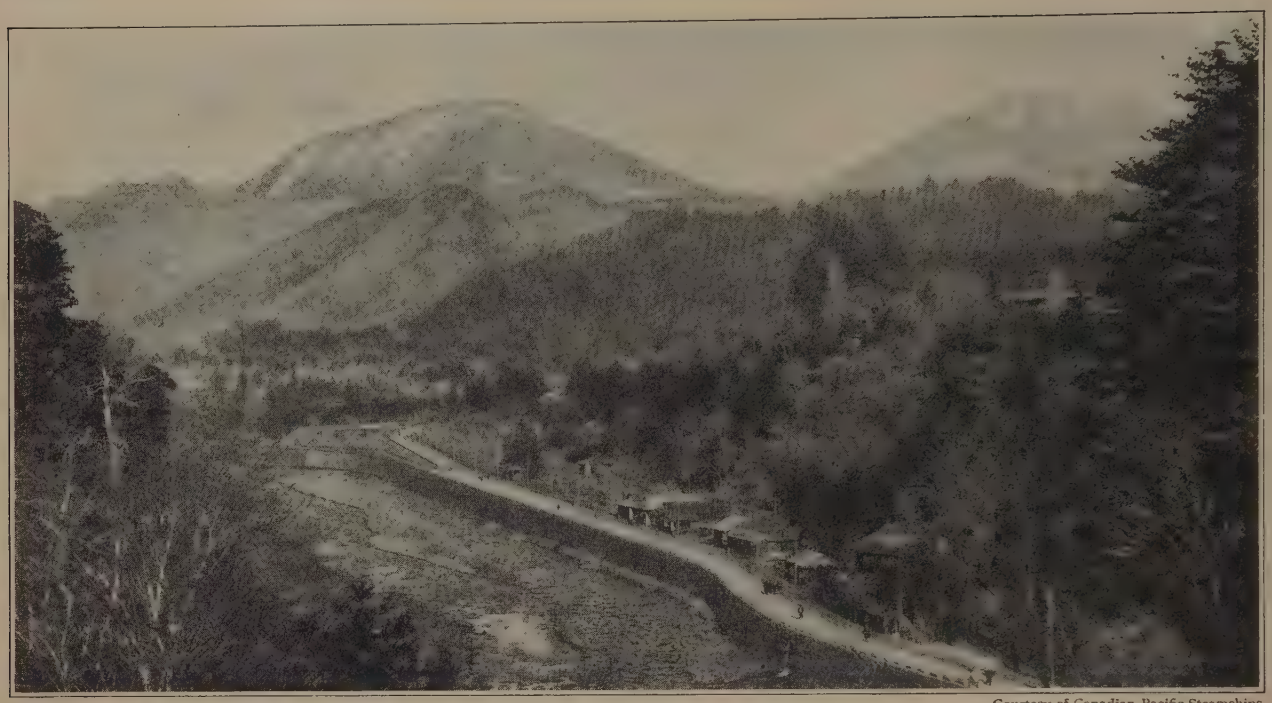
5. Now find the islands of Honshu, Shikoku, Kyushu (*M5*), and Hokkaido (*N4*). These four islands, with the many small islands close by, form what is known as Japan proper. They are the islands where the Japanese nation began its growth, and from which the Japanese have extended their control over lands farther north, west, and south. When we use the name Japan, we mean these very important islands, rather than the entire Japanese Empire.

6. What statement can you make regarding the location of the islands of Japan and of the British Isles with reference to the great land mass of Eurasia? 7. What differences in the surface of the land do you find between the British Isles and the islands of Japan?

8. Now turn to page 119. Notice that Honshu, Shikoku, and Kyushu are among the most densely populated parts of Asia. 9. How do they compare with Great Britain and Ireland in density of population? in rainfall?

Some comparisons. You have discovered several interesting facts from the maps: (1) that the Japanese occupy a group of islands off the eastern coast of Eurasia, just as the British occupy a group of islands a little farther north off the western coast of Eurasia; (2) that both groups of islands have abundant rain for agriculture; (3) that the islands of Japan are much more mountainous than the British Isles; and (4) that Honshu, Shikoku, and Kyushu are even more densely populated than Great Britain and Ireland.

As you read further, find reasons why so many people are able to make a living in the mountainous islands of Japan.



Courtesy of Canadian Pacific Steamships

Figure 346. A beautiful valley among the mountains of Honshu, the largest of the islands of Japan. Notice the broad, well-paved automobile road which has been built along the river bank. Notice also the thick forests which cover the foothills, and the patches of snow lying on the higher mountain peaks in the distance.

The lands of Japan. Most travelers from our country to Japan sail from one of our Pacific seaports to the Japanese port of Yokohama, on the island of Honshu. If they are fortunate enough to enter the harbor of Yokohama on a bright, clear day, they see, off to the west, the beautiful mountain which the Japanese call Fujiyama, or Mount Fuji. *See Figure 345.*

Mount Fuji is the highest of the many volcanic peaks of Japan, which have been built up by great volcanic eruptions and by outpourings of lava. Can you name some peaks in Europe and the Americas which have been built up in the same way? Many of the Japanese volcanoes are still active, but there has been no eruption of Fujiyama for over two hundred years.

Most of the islands of Japan are mountainous, and the mountains are young, high, and rugged. In many places they are so steep that they can be used only for growing trees. Because of this, and of the abundant rainfall, forests cover about half of the surface in Japan. *See Figure 346.*

You will remember that many regions of young mountains suffer from earthquakes. In the islands of Japan slight earthquakes occur almost every day, and once in every few years a very severe earthquake causes much damage and loss of life.

Near the coast and in the valleys among the mountains of Japan there are lowlands, but most of them are very small. The only large plain is the one in which Tokyo, the capital of the country, is located. Since so much of the country is made up of steep mountain slopes, the lowland areas are greatly overcrowded with people. In Honshu, for example, there are over 400 people to the square mile, but they are so unevenly distributed that the lowlands have more than 1000 people to the square mile. No part of the continent of Europe is so densely populated as that.

Figure 347. Transplanting rice in Japan. Both men and women work in the wet, muddy paddy fields, setting out the young rice plants. You can easily imagine what hard, tiresome work this is.

Farming in Japan

A land of very small farms. Because Japan is so mountainous, only about 16 per cent of the land is suitable for farming, yet more of the Japanese are engaged in farming than in all the other occupations combined. Since the amount of farm land is so limited, and the farming population is so large, the farms are very small. The average farmer has only two and a half acres of land on which to raise crops to support his family. Some farmers have five or six acres, while others have only one or two.

Since the farms are so small, the farmers cultivate every bit of land possible, and they tend their crops with the greatest care so that the land may produce all that it possibly can. Only in this way can such large numbers of people make a living by farming in this overcrowded country, and although they work hard, many of them are very poor.

In traveling through the farm lands of Japan you will notice that few of the farmers keep any cattle or sheep. That is because as much land as possible must be used to raise food for the people, and little can be spared for pasture or forage crops. For this reason meat and dairy products are expensive luxuries in Japan.

The chief crop. Rice is by far the most important crop in Japan, just as it is in the other Oriental countries. One reason for this is that the climate is well suited to rice-growing. Another reason is that in these densely populated countries the people must get as much food from the soil as possible, and an acre of land will produce a greater quantity of rice than of any other grain which they can raise, and at less cost. For these reasons the Oriental nations long ago came to depend on rice as their chief food.

Rice-growing. Early each spring the farmers plant the rice seeds in beds which have been enriched with fertilizers. In these seedbeds the plants are allowed to grow until they are a few inches above the ground. In the

Courtesy of Toyo Kaisen Kaisha

Figure 348. Harvesting rice in Japan. The grain is cut by hand with sickles or knives, and tied in bundles. At harvest time, as at transplanting time, the women help the men in the fields.

Figure 349. Japanese children watching their mothers thresh rice. Notice that the women are pulling the grain through a large wooden comb which strips the seeds from the stalks.

meantime, the farmers plow the fields to which the rice plants are soon to be transplanted. These are called paddy fields.

When the time for transplanting comes, the young plants are carefully pulled from the seed-beds, tied in bundles, and set out in the paddy fields, which are flooded with water to a depth of six to twelve inches. Figure 347 shows how this work is done. During the early part of the growth of the rice, the paddy fields are flooded from time to time, for the plants need large quantities of water to grow well. Later, when the grain begins to ripen, the fields are drained.

Figure 348 shows how the rice is harvested. After it has been cut and tied in bundles, the bundles are hung up to dry in the sun, and in a few days the grain is ready for threshing. Figure 349 shows one of the ways in which the Japanese separate the seeds from the stalks, or straw. Some of the farmers have simple threshing machines like the one shown in Figure 350.

How the rice crop is used. Every farmer tries to grow rice enough to supply his family, and, if possible, a little more. Those who have more than they need send their surplus to the cities, where there is always a good market for it. Altogether, the Japanese farmers raise many millions of bushels of rice on their little farms, yet they cannot fully supply the needs of the country, and Japan imports rice from India, Siam, and French Indo-China.

Although the Japanese raise rice chiefly for food, they make many different uses of the straw. The farmers thatch their houses with rice straw, and most of the country people wear straw sandals. The broad-brimmed hats such as you see in Figures 347 and 350 are also made of rice straw, and large quantities of mats and baskets are made of the same material. None of the rice straw is wasted, for all that is not used in other ways is put back on the fields as fertilizer.

Other food crops. In addition to rice, the Japanese farmers raise considerable quantities

Figure 350. Japanese farmers tying up bundles of rice to be sent to market. The outer covering of the bundles is matting made of rice straw. At the right is a simple threshing machine.

Figure 351. Cherry-blossom time in Japan. This picture shows the house of a well-to-do Japanese gentleman surrounded by blossoming cherry trees.

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Figure 352. Japanese women picking tea leaves on a steep hillside. Look carefully, and you will see a Japanese baby strapped on his mother's back.

of wheat, barley, and rye. These are the chief grain crops in the northern parts of the country that are too cool for rice, and in the rice-growing lands they are winter crops, planted in September or October, after the rice has been harvested. The Japanese also raise large quantities of beans, peas, and other vegetables, and many different kinds of fruits, such as peaches, pears, and plums.

Japanese cherry trees. No doubt you have heard of the many cherry trees in Japan. The Japanese do not cultivate these trees for their fruit, but simply for their beauty. The Japanese are lovers of everything that is beautiful, and they look forward with the greatest pleasure to the springtime, when the cherry trees are covered with delicate pink blossoms. *See Figure 351.*

The tea crop. The food crops grown by the farmers of Japan are for use within the country, and there is no surplus for export. The chief crop grown partly for export is tea. The tea bushes are usually found on hillsides which are too steep for field crops and where the drainage is good. Two or three crops of tea leaves are picked by the women and girls each summer, and about one third of the yearly crop is exported, chiefly to the United States. After traveling through Japan you will understand why the greater part of the crop is used within the country, for all the Japanese, rich and poor, drink tea with every meal. *See Figure 352.*

Silk — the greatest export product. People often speak of raw silk as a money crop. It does not come directly from the soil, like cotton, but silkworms must have mulberry leaves to feed on, and in the silk-producing countries it is chiefly the farming people who cultivate the mulberry trees and care for the silkworms. In Japan one third of all the farmers raise silkworms, and raw silk is by far the greatest money crop and the most valuable export product of the country. Millions and millions of dollars' worth of raw silk are exported each year, and more than nine tenths of it comes to the United States.

Caring for the silkworms. Mulberry trees grow well in many of the warm temperate parts of the world, but the raising of silkworms requires so much care and handwork that raw silk is produced only in countries which, like Japan, are so densely populated that labor is cheap. For this reason the Oriental countries

By Ewing Galloway, N.Y.

Figure 353. Japanese women removing silkworms from the trays of mulberry leaves where they have been feeding. The worms are full grown, and are ready to begin spinning their cocoons.

Figure 354. A Japanese girl at work in a silk filature, reeling fibers from silkworm cocoons.

of Japan and China produce far more raw silk than do any other countries in the world.

The raising of silkworms is carried on in the farmers' homes, and the women and children do the work. After the tiny worms hatch from the eggs, they are spread out on clean trays, and for three or four weeks fresh mulberry leaves are gathered several times a day to feed them. This is the period of growth for the worms, and at the end of it they stop eating and begin to spin the delicate silvery fiber which they wind around themselves, making cocoons about an inch long. *See Figure 353.*

Preparing raw silk for market. Years ago all the reeling, or unwinding, of the fibers from the cocoons was done by hand by the Japanese women who raised the silkworms. Now most of the farmers sell their cocoons to dealers who, in turn, sell them to factories called *filatures.* In the filatures women are employed to do the reeling with the help of machinery. In the reeling several fibers are twisted together to form a single strand of raw silk. The strands are then made up in bundles called skeins, and the skeins are packed in bales to be sent to factories in Japan or to the seaports for export. *See Figure 354.*

Sentences to complete. Prove that you have learned the more important facts about farming in Japan by completing the following sentences correctly.

1. Only a small proportion of the land in Japan is suitable for farming because _____.
2. Japanese farms are very small because _____.
3. Rice is the chief food crop because _____.
4. There are no surplus food crops for export because _____.
5. Few cattle or sheep are raised in Japan because _____.
6. The Japanese raise large quantities of tea because _____.
7. Japan is one of the two great silk-producing countries because _____.

Special credit work. Find out what Oriental people discovered that the fibers of silkworm cocoons could be used to make cloth, and how the discovery happened to be made.

EURASIA
POLITICAL MAP
SHOWING
PRINCIPAL RAILROADS
Scale of statute miles
0 100 300 500 750 1000
Capitals of countries
Capitals of minor divisions
Principal railroads
Chief seaports
Navigable rivers in Asia
Land below sea level
Lowlands and interior plains
Uplands and plateaus
Old, worn-down mountains
Young, rugged mountains
Natural boundaries between Asia and Europe
ATLANTIC OCEAN
ARCTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
UNION OF SOVIET SOCIALIST REPUBLICS
CHINESE REPUBLIC
MONGOLIA
TURKEY
PERSIA
ARABIA
INDIA
TIBET
SIAM
FRENCH INDO-CHINA
BRITISH MALAYA
DUTCH EAST INDIES
JAPAN EMPIRE OF
CEYLON (British)
SVALBARD (To Norway)
FRANZ JOSEF LAND
NOVAYA ZEMLYA
TAIMIR PENINSULA
NEW SIBERIAN ISLANDS
WRANGELL I.
BERING SEA
ALEUTIAN IS. (To U.S.)
KAMCHATKA PENINSULA
C. Dezhnev
C. Lopatka
SAKHALIN ISLAND
KURIL IS.
CHISHIMA IS.
HOKKAIDO
HONSHU
KYUSHU I.
SHIKOKU I.
RYUKYU IS.
TAIWAN (FORMOSA)
HAINAN
PHILIPPINE ISLANDS
LUZON I.
MINDANAO I.
SULU ARCHIPELAGO
CAROLINE ISLANDS (Japanese)
PELEW IS. (Japanese)
YAP I.
NEW GUINEA
CELEBES
MOLUCCAS
BORNEO (Dutch)
SUMATRA
JAVA
NIAS I.
BANKA I.
BILLITON I.
BALI I.
SUMBAWA I.
TIMOR I. (Port.)
FLORES I.
SUNDA STR.
MALACCA STR.
LACCADIVE ISLANDS (To India)
MALDIVE ISLANDS (To Ceylon)
ANDAMAN IS. (To India)
NICOBAR IS. (To India)
NATUNA IS.
EQUATOR
TROPIC OF CANCER
ARCTIC CIRCLE
Moscow
Leningrad
Archangel
Odessa
Black Sea
Caspian Sea
Aral Sea
Lake Balkash
Lake Baikal
Ural Mts.
Volga R.
Ob R.
Yenisei R.
Lena R.
Amur R.
Yangtze R.
Hwang R.
Mekong R.
Irrawaddy R.
Ganges R.
Indus R.
Tigris R.
Euphrates R.
Nile R.
Suez Canal
Persian Gulf
Gulf of Oman
Red Sea
Gulf of Aden
Gulf of Siam
Sea of Japan
Yellow Sea
East China Sea
South China Sea
Celebes Sea
Java Sea
Banda Sea
Arafura Sea
Timor Sea
Bay of Bengal
Arabian Sea
Okhotsk Sea
Bering Sea
Barents Sea
Kara Sea
Laptev Sea
East Siberian Sea
Chukchi Sea
Beaufort Sea
Greenland Sea
Norwegian Sea
North Sea
Baltic Sea
Mediterranean Sea
Black Sea
Caspian Sea
Red Sea
Persian Gulf
Gulf of Oman
Arabian Sea
Bay of Bengal
Gulf of Siam
Sea of Japan
Yellow Sea
East China Sea
South China Sea
Celebes Sea
Java Sea
Banda Sea
Arafura Sea
Timor Sea
Bering Sea
Okhotsk

Figure 355. Japanese fishermen getting ready to go out to the fishing grounds. There are over a million people in Japan who depend on fishing for their entire living, and even larger numbers of the Japanese depend partly on fishing and partly on farming.

Fisheries, Forests, and Mines

Japanese fisheries. Like the British, the Japanese have long depended on the sea for part of their food supply, and for the same reasons: (1) because the dense population demands large quantities of food, and the land that can be used for crops is limited; (2) because there are many good harbors along the coast; and (3) because the islands are bordered by waters rich in fish.

The best fishing grounds of Japan are the cold waters around the islands north of Honshu, — waters in about the same latitude as the great fishing grounds of the North Atlantic Ocean. Altogether, there are nearly a million Japanese fishermen, and they catch huge quantities of cod, herring, mackerel, and other fish which help greatly in supplying the millions of people in the country with food. *See Figure 355.*

Oysters, crabs, lobsters, and other shellfish are plentiful in the waters bordering Japan, and large quantities are gathered by the people who live along the coast. The canning of crab meat has become an important industry, and canned crab meat is one of the products which the Japanese export to our country.

Culture pearls. The Japanese have discovered a wonderful process by which oysters can be made to produce pearls. This is done by opening the young oyster and placing a tiny grain of sand inside the shell. In time the oyster will cover the grain of sand with layer after layer of a milk-white substance which forms the pearl. Such pearls are called "culture pearls," and they bring high prices.

Forest products of Japan. The most valuable forests of Japan are those in the northern half of Honshu and in Hokkaido and Japanese Sakhalin, where, because of the cool climate, the trees are mostly evergreen softwoods. In this northern part of the empire the Japanese have started pulp and paper mills, and each year they are producing more of the paper which they need.

About one third of the lumber cut in Japan comes from the beautiful cone-bearing trees known as *cryptomeria.* These trees belong to the same great tree family as the giant sequoias of California, and they grow to heights of nearly 200 feet. In many parts of Japan the government is reforesting cut-over areas, and the cryptomeria are the trees used most for this purpose. *See Figure 356.*

Another very valuable tree in Japan is the bamboo, which grows in the warmer parts of the islands. It grows rapidly and provides a light and exceedingly useful wood. The Japanese people build many of their houses of bamboo and make furniture of the same material. Houses built of light wood are safer in Japan than houses of heavier wood because they stand the earthquake shocks better.

Mineral resources. Judging from the map on page 346, what do you think are the most valuable mineral products of Japan? Do you think the Japanese are well supplied with the mineral resources that are most necessary for manufacturing? Give reasons for your answer.

The most valuable of Japan's mineral resources is the coal which is mined in Kyushu

and Hokkaido, and which provides the people with fuel for manufacturing. In addition to coal there is the petroleum of Honshu, but the wells there supply only a small part of the needs of the country, and mineral oils are imported. From what countries do they come?

Among the metal ores mined in Japan copper is by far the most valuable, and Japan stands next to the United States, Chile, and Belgian Congo in copper production. Gold, silver, and a few other metal ores are also mined, but in much smaller quantities.

Courtesy of Miss Louise Fay

Figure 356. Cryptomeria trees in Honshu. Notice the size of the tree trunks at the right. The road in the picture runs for forty miles through a cryptomeria forest.

The islands of Japan are lacking in good supplies of iron ore; but fortunately there are iron mines in the peninsula of Chosen, and others in China are under Japanese control. Thus with its home supplies of coal and with iron ore under its control in the mainland of Asia, Japan is well prepared to manufacture products of iron and steel.

Hydroelectric power. Since Japan is a mountainous country with abundant rainfall, it has many swift-flowing streams. Already the Japanese have harnessed the water power of some of their streams to make hydroelectricity, and much more hydroelectric power is likely to be developed in the future. Thus electric power, as well as steam power from coal, is at hand for use in manufacturing.

Cities, Manufacturing, and Trade

Contrasts between city and country. In the country districts of Japan the people live and work much as their ancestors have done for hundreds of years, cultivating the land with the same painstaking care, and content with the simplest of food, clothing, and houses. But in the cities we shall see another and newer Japan, where great changes have taken place since the Japanese have come in touch with the Western nations. Among the most important of these changes are the development of manufacturing and the growth of foreign trade.

The six largest cities of Japan are Osaka, Tokyo, Nagoya, Kyoto, Kobe, and Yokohama. Osaka, with over two million people, and Tokyo, with nearly two million, are the largest cities in Asia. Find these six cities on the map on page 346 (*E–F3*) and notice that they are all located in lowlands in Honshu, the largest and most important of the islands of Japan. Which one is the capital of Japan? What three are seaports?

Tokyo and its port. Tokyo, the capital and second largest city of Japan, is located at the head of Tokyo Bay in the largest and most densely populated lowland region of Honshu. Its harbor is too shallow for ocean ships, and so Yokohama, farther down the bay where the water is deep, has become its seaport. In 1923 Yokohama was almost entirely destroyed by a great earthquake, and Tokyo was partly destroyed. This was a terrible calamity for the Japanese; but they started at once to repair the damage, and both cities have now been rebuilt.

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Figure 357. Some of the modern buildings in the business section of Tokyo. The large building at the right is a Japanese department store, and beyond it are two banks.

In rebuilding Tokyo the people have laid out broad streets and constructed modern stores, banks, business buildings, and government buildings, so that the new sections of the capital now resemble cities of western Europe and the United States. *See Figure 357.*

The older sections of Tokyo are very different, for they have the narrow streets lined with little one-story and two-story wooden buildings which are common in all Oriental cities. Opening wide on many of these streets are little shops where all kinds of Japanese goods are sold, and little workshops where Japanese craftsmen are busy making many articles of wood, paper, metal, and pottery such as we see in Japanese stores in this country. *See Figure 358.*

Like all the larger cities of Japan, Tokyo offers a strange and interesting mixture of Eastern and Western sights. Bicycles, rickshaws, oxcarts, electric cars, automobiles, carts drawn by horses, and carts pulled by men pass back and forth through the main streets. In the crowds on the sidewalks one may see Japanese business men, clerks, and students dressed as men in our country dress, and laborers wearing the scanty native working clothes. Among the women there are many who have adopted Western fashions of dress, and many others who still wear the long and beautiful kimonos with bright-colored sashes, which are their national costume. *See Figure 359.*

Business and manufacturing in Tokyo. Since Tokyo is the capital of Japan, it is the home of the emperor and the center of all the work of the government. It is also an important business and banking center, and has many manufacturing plants. Among the manufacturing industries the making of cotton goods, woolen goods, clothing, and paper, and the refining of sugar are especially important. Which one of these industries makes use of raw material produced in Japan? The others depend on imported raw materials. Study the

Courtesy of Canadian Pacific Railway

Figure 358. One of the many shops in Tokyo where paper umbrellas and Japanese lanterns are sold.

Figure 359. Some young Japanese women out shopping in their silk kimonos and their straw sandals.

Figure 360. A small passenger boat on the Inland Sea of Japan. This beautiful body of water is about 240 miles long and from 8 to 40 miles wide, and it is deep enough for large ocean liners. Throughout its length it is dotted with rocky, wooded islands.

imports of Japan on the map on page 346, and tell where the raw materials come from.

Yokohama and its trade. Yokohama is the leading seaport of Japan, and the center of the great export trade in raw silk. The leading silk-producing region of Japan is in the part of Honshu west of Tokyo and Yokohama, and therefore Yokohama is the center where raw silk is collected for shipment to distant lands. As you would expect, many business companies dealing in silk have their headquarters there. Many other Japanese products are exported from Yokohama, but their importance is small in comparison with silk. All the silk is inspected before it is shipped away.

The imports of Yokohama are many and varied, and they include raw materials such as cotton and wool, foodstuffs such as wheat, rice, and raw sugar, and manufactured goods, especially machinery of various kinds. Large quantities of the imports go to Tokyo for use there and for distribution to other parts of the country. Some of the raw materials are used in Yokohama itself, for this city, like most other large seaports, is also a manufacturing center.

Nagoya and Kyoto. Southwest of the lowland in which Tokyo and Yokohama are located are two smaller lowlands, both of which are densely populated and open on bays. In one of these lowlands is the industrial city of Nagoya, which has modern cotton mills and is the leading center for the manufacture of pottery and porcelain in Japan.

In the other lowland is Kyoto, one of the most beautiful cities in Japan. For a thousand years, until 1868, Kyoto was the capital of Japan, and the great center of the art and culture of the country. The ancient palaces of the rulers of long ago contain many beautiful works of art, and the temples, shrines, and gardens in and near the city are known throughout the Orient for their beauty.

Kyoto is noted for its manufacture of silk goods. Some of this work is done in factories, but many of the finest products are woven and embroidered by hand. Kyoto is also the great center for the finest of the old-time industries of Japan: the making of delicate porcelains, beautiful lacquer and bronze wares, exquisite fans and dolls, and the beautiful copper and enamel ware known as cloisonné.

Osaka and Kobe. Turn to the map on page 346 and study the location of Osaka and Kobe (*E3*). Notice that they are at the northeastern end of the winding waterway which separates Honshu from Shikoku and Kyushu. This waterway is called the Inland Sea of Japan, and its mountainous shores and wooded islands make it one of the most beautiful bodies of water in the world. *See Figure 360.*

Osaka is the largest city and the greatest manufacturing center of Japan. People call it "the Manchester of Japan" and also "the Pittsburgh of Japan." As these names sug-

Courtesy of Saco-Lowell Shops

Figure 361. A Japanese girl tending a machine in a cotton-spinning mill in Osaka. The machine was manufactured in one of our New England cities.

gest, it is the leading cotton-manufacturing city of the country, and the leading center for the manufacture of iron, steel, and all kinds of iron and steel products, varying in size and value from locomotives and ships to wire and nails. Coal for its industrial plants comes from Kyushu, iron ore for its blast furnaces from China and Chosen, and cotton for its cotton mills from India, the United States, and China. *See Figure 361.*

Osaka is also an important seaport, but not so important as Kobe because its harbor is too shallow for the larger ocean ships. Kobe is fortunate in having a deep harbor, and the people have constructed modern docks and wharves, with all the necessary machinery for loading and unloading ships. In the business section of the city there are many large office buildings, and most of the business firms interested in Japanese foreign trade have headquarters or branch offices there. *See Figure 362.*

Nagasaki. Although most of Japan's foreign trade is carried on through the three ports of Yokohama, Kobe, and Osaka, there are a number of smaller seaports. Among them is Nagasaki, which is well known to ship captains as a coaling station. Find Nagasaki on the map on page 346 (*D3*). What reason can you give for its importance in supplying ships with coal? There is also a large shipyard at Nagasaki, where many ships for the Japanese navy and the Japanese merchant fleet are built.

Japanese railroads. One of the indications of modern progress in Japan are the many miles of railroads which have been built. Government railroads connect all the more important cities with one another, and railroads built by private companies reach many of the smaller places.

A summary of manufacturing. Fifty or sixty years ago there were very few factories in Japan, and nearly all the manufacturing was done by hand in the homes of the people and in small workshops. The Japanese had become

Courtesy of Admiral Oriental Line

Figure 362. A view of part of the business section and harbor of the Japanese port of Kobe. This city is a center for steamship lines which run to all parts of Japan and to distant parts of the world. It is also an important railroad center.

very skillful hand-workers, but they knew little or nothing of machine-manufacturing.

After the Japanese came in touch with Europe and the United States through trade, they saw that their country could make great progress by adopting Western methods of manufacturing. The government sent officials to the countries of western Europe and to the United States to study manufacturing methods, and in time factories were built and equipped with machinery purchased in those countries. From the very beginning Japan has made steady progress in manufacturing. Its chief advantages for this work are its coal and water power, and its large and industrious population, which not only supplies abundant workers, but also provides large home markets for manufactured goods.

Today the principal factory industries of Japan are the making of cotton, silk, and woolen goods, the manufacture of paper and matches, and the making of china and other kinds of pottery. Among the textile industries, which ones depend on imports of raw materials?

Japanese trade. Turn to the map on page 346 and prove by the imports that as yet Japan does not fully supply its own needs for woolen goods and for iron and steel products. Prove by the exports that Japan manufactures a surplus of cotton and silk goods.

As you already know, by far the most valuable of Japan's exports is raw silk, which comes from the farms of the country. Cotton goods rank second and silk goods third. The export of manufactured goods is a recent development in Japanese trade, and shows that Japan is becoming more and more of a manufacturing country.

Among the imports of Japan, cotton, wool, iron and steel, and other raw materials have the highest value,—another proof of the importance of manufacturing. The Japanese also import certain manufactured products such as machinery, which they do not as yet produce in sufficient quantities to supply their needs, and certain foodstuffs, especially raw sugar, wheat, and rice.

About 40 per cent of the exports of Japan, by value, go to the United States, chiefly because our country takes such a large proportion of Japanese silk. The next largest share goes to China, and the third largest to India, for those countries are the best customers for Japanese cotton goods.

In the import trade the United States holds first place, followed by India and China, for these three countries supply most of the raw cotton for the mills of Japan. Then comes Great Britain, which supplies Japan with many of its imports of manufactured goods.

Some things to explain. Explain why

1. The Japanese are one of the great fishing nations of the world.
2. The forests of Japan are a valuable resource.
3. Japan is well supplied with means of obtaining power for manufacturing.
4. Japan has plenty of workers for its mills and factories, and a large home market for manufactured goods.
5. The United States holds first place in the export and import trade of Japan.
6. India and China rank high in the export and import trade of Japan.
7. Yokohama is the leading seaport of Japan.
8. Osaka is called "the Manchester of Japan" and "the Pittsburgh of Japan."

3. Chosen and Taiwan

The island of Taiwan, or Formosa, has been part of the Japanese Empire since 1895, and the peninsula of Chosen, or Korea, since 1910. Taiwan formerly belonged to China, and the people there are largely Chinese. Chosen is the home of the Mongolian people known as Koreans, but there are also many Chinese and Japanese living in the peninsula. As you study Chosen and Taiwan, find out why they are valuable to the Japanese people.

Chosen (Korea). Like Japan proper, Chosen is mountainous, yet most of the people are farmers. Chosen, however, is less densely populated than most parts of Japan proper, and thus the people have a surplus of farm products which are exported chiefly to Honshu. Among these surplus farm products are rice, soy beans, large quantities of raw silk, and a considerable quantity of cotton. Soy beans are valuable oilseeds. The beans are pressed to obtain the oil, and the "cake" that is left makes excellent fertilizer. In Japan, where animal fats are scarce, bean oil is in great demand for cooking purposes. Explain why the people of Japan proper need fertilizers.

Figure 363. A Korean farmer and his home. What reason can you give for the fact that the Korean farmers seldom have difficulty in finding markets for the products which they raise?

Chosen has coal and valuable deposits of iron, copper, and other metal ores. Since the Japanese have been in control of the peninsula, coal and iron mines have been opened, blast furnaces have been built, and pig iron is exported to Honshu.

It is clear, then, that Chosen is playing an important part in helping to supply the people of Japan proper with foodstuffs and with raw materials. Nine tenths of all the exports of the peninsula go to Japan, and most of the goods which the Koreans obtain from outside their own country are purchased from the Japanese. *See Figure 363.*

The largest city of Chosen is its capital, Keijo, which is often called by its Korean name, Seoul. From Keijo one may travel by train to Fusan, the chief seaport. Find Keijo and Fusan on the map on page 346 (*D3*). Why is Fusan well located for trade with Japan proper?

Dairen. Northwest of Chosen is the part of China known as Manchuria, and there, at the tip of a mountainous peninsula, the Japanese have developed the modern port of Dairen on land leased from the Chinese. A little farther north in Manchuria the Japanese own iron mines and blast furnaces, and from Dairen pig iron is shipped to Honshu. Find Dairen on the map on page 346 (*D3*), and notice the railroad that runs northward from there, joining the Trans-Siberian Railroad. This railroad of Manchuria is partly controlled by the Japanese.

Taiwan (Formosa). Because of its location, Taiwan is a tropical island, and can therefore produce many crops for which the climate of Japan proper is too cool. Among these crops the most valuable is sugar cane, and large quantities of raw sugar are exported to Japan. *See Figure 364.*

Taiwan also helps to supply the Japanese people with rice, tea, and tropical fruits, especially bananas. Coal is mined in the island, and this too is exported to Japan.

The products of Taiwan best known in the United States are tea and camphor. The tea is the kind known as oolong, and it is sold in most of our grocery stores. Camphor is a

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Figure 364. A sugar plantation in Taiwan (Formosa). The Japanese have started many sugar plantations in this tropical island. Can you explain why?

whitish, oily substance obtained by heating chips of the wood of the camphor tree in steam over boiling water. Camphor trees grow wild in Taiwan, and this island alone supplies about half of all the camphor produced in the world. *See Figure 365.*

The Japanese have done much to develop the resources of this valuable island. They have sent groups of colonists there, built roads and railroads, opened schools, planted large numbers of camphor trees to take the place of those which have been cut down, and improved the methods of raising sugar cane and other crops.

Japanese islands in the Pacific Ocean. On the map on page 346 find the groups of small islands in the Pacific Ocean which belong to Japan (*F5* and *E–F6*). Before the World War these tropical islands were German possessions, but at the end of the war they were placed under the protection of Japan. Their chief export product is copra.

Japan and Great Britain
A Comparison

At the beginning of your study of Japan you were asked to find out why it is said that this Far Eastern country is becoming "the Britain of the Orient." You know now that it is because Japan, like Great Britain, has taken advantage of its location and resources to develop manufacturing and foreign trade.

Turn back to page 89 and read over the list of advantages for the growth of manufacturing in Great Britain. As you do so, tell whether or not Japan has the same advantages. When you have finished, answer the following questions:

1. Why did the Japanese, like the British, long ago begin to make use of the sea?
2. Why were both nations well prepared to engage in foreign trade when such trade became necessary?
3. Why do both nations import large quantities of raw cotton today?
4. Why are raw materials the leading imports of both Great Britain and Japan?
5. In Great Britain foodstuffs rank next to raw materials among the imports. In Japan manufactured goods hold second place. What explanation can you give for this difference?

By Burton Holmes from Ewing Galloway, N.Y.

Figure 365. A native house in Taiwan. The people who live in this house get their living by cutting camphor wood and extracting the camphor from it.

6. In Great Britain manufactured goods are by far the most valuable exports. In Japan the exports of raw silk are worth more than all the exports of manufactured goods combined. What reasons can you give for this difference?

7. In Japan, as in Great Britain, the population has increased greatly since manufacturing became important. If, as time goes on, manufacturing continues to increase, in what ways will Japan's foreign trade probably become more like Great Britain's?

8. Why have both Japan and Great Britain large home markets for manufactured goods?

Making choices. Choose the word or phrase which makes each sentence below correct.

1. The leading food crop grown in Japan is
wheat. millet. rice.

2. The Japanese farmers produce much
raw cotton. raw silk. raw wool.

3. The most valuable mineral resource of Japan is
petroleum. coal. iron ore.

4. The most valuable metal ore mined in Japan is
copper. iron ore. gold.

5. The most valuable export product of Japan is
tea. raw silk. pottery.

6. The most valuable imports of Japan are
manufactured goods. raw materials. foodstuffs.

7. The country which buys the greatest quantities of raw silk from Japan is
the United States. France. Great Britain.

8. The country which holds first place in supplying Japan with imports is
China. the United States. India.

Giving reasons. Complete each sentence below by giving reasons.

1. Many of the people of Japan are very poor because _____.

2. Although Japan is one of the great rice-growing countries, the people import rice from other parts of the Far East because _____.

3. It is fortunate for the Japanese that the waters bordering their homeland are rich in fish because _____.

4. There are forests in many parts of Japan because _____.

5. Many of the forested lands will never be cleared for farming because _____.

6. Japan has many swift-flowing rivers because _____.

7. The rivers are of great value to the people because _____.

Naming cities. Name each city of Japan described below and answer the questions about it.

1. The capital of Japan. Why is it not a seaport? Why is it a manufacturing center?

2. The leading seaport of Japan. Why is it the chief center for the export of raw silk from Japan?

3. The largest city of Japan. For what manufacturing industries is it noted? What advantages has it for obtaining raw materials and fuel for its industrial plants, and for marketing manufactured goods?

4. The most important seaport on the Inland Sea of Japan. Why is it a more important port than Osaka? Why do many foreign business firms have offices in this city?

5. An important coaling station for ships on the island of Kyushu. What kind of manufacturing is carried on at this port?

Some things to explain. 1. Explain why the Japanese lived by themselves for so many centuries, and how they finally came to take part in the trade of the world.

2. Give as many reasons as you can to explain why the people of the United States are interested in the industrial and commercial development of Japan.

3. Explain how it is possible for so many millions of people to make a living in the mountainous islands of Japan.

4. Explain why it has been of advantage to Japan to obtain control of the peninsula of Chosen (Korea).

5. Explain why the Japanese are interested in developing the resources of the island of Taiwan (Formosa).

III. THE CHINESE REPUBLIC

1. Foreword

A very old nation. The Chinese are one of the oldest of the civilized nations of the world. For many centuries they were governed by emperors, and their lands formed the Chinese Empire. In 1912 the empire was overthrown, and the Chinese Republic took its place.

Among all the countries of the world the Chinese Republic is the second largest in area. The Soviet Union is first, and after the Chinese Republic come Canada, Brazil, and the United States without Alaska. The Chinese have never taken a careful census, or count, of their population, but it is estimated that there are about four hundred and forty million people in the country. This is the largest number of people in any one country in the world.

The Chinese have always been a nation chiefly of farmers, and for thousands of years they lived so much by themselves that they knew little of what was going on in the rest of the world. Nevertheless, they made remarkable inventions and discoveries, and many of them became skillful craftsmen, talented artists, and great scholars. They were civilized people when only savage tribes occupied western Europe and America.

A land of contrasts. Today China, like Japan, is a land of marked contrasts, where Eastern and Western civilizations are mixing, and the new and the old are found side by side. In the country districts millions of farmers live and work almost as simply as their forefathers did thousands of years ago, but in the cities the contrasts between the old and the new are very noticeable. Goods are transported in all kinds of vehicles, from wheelbarrows to modern motor trucks; people ride from place to place in rickshaws, taxicabs, and electric cars; skilled craftsmen work by hand in tiny shops, and factory workers tend machines in modern manufacturing plants. *See Figures 366 and 367.*

As you study the Chinese Republic, try to find out (1) why the people lived apart from the rest of the world so long; (2) how so many people can make a living in the country; (3) why farming has always been more important than manufacturing and commerce in China; and (4) why such rapid changes are taking place in the country today.

Political divisions of the republic. The Chinese Republic is made up of four principal political divisions. The eastern, and most important, division is China, or China proper, as it is often called to distinguish it from the rest of the country. China proper borders the Pacific Ocean and includes the section in the north known as Manchuria. In the interior are Mongolia, Sinkiang, and Tibet. Find these four main political divisions on the map on page 343.

Map studies. 1. On the map on page 118 find the following regions of the interior of the Chinese Republic, and give their elevations: (1) Plateau of Mongolia; (2) Zungarian Basin; (3) Plateau of East Turkestan; and (4) Plateau of Tibet. 2. Which one of these regions is much higher than the others? 3. How do their elevations compare with the elevations of the surrounding mountains? 4. Now locate these interior plateaus on the map on page 116. 5. What can you say about their vegetation? 6. What explanation for their vegetation is suggested by Figure 112 (p. 119)? 7. On the map on page 118 locate (1) the Manchurian Lowlands; (2) the Plain of China; (3) the Szechwan Basin; and (4) the East China Highlands. These regions are in China proper. 8. What does Figure 112 show about their rainfall? 9. How do you expect their vegetation to differ from that of the interior plateaus? Check your answer by the map on page 116. 10. What does Figure 113 show about the number of people in China proper compared with the number in the interior plateaus?

By Burton Holmes from Ewing Galloway, N. Y.

Figure 366. A shopping street in the Chinese port of Shanghai. Notice the rickshaws. They are used in Chinese cities as taxicabs are used in our cities.

By Burton Holmes from Ewing Galloway, N. Y.

Figure 367. Modern means of transportation in Shanghai. The traffic policeman is stopping an automobile so that passengers may get onto the electric car.

The uneven distribution of population. You have discovered from the maps that the interior of the Chinese Republic is very thinly populated, while China proper is crowded with people. In fact, as Figure 51 on page 52 shows, China proper is one of the most densely populated parts of the whole world. It makes up less than half the area of the republic, yet it has 98 per cent of all the people. What reasons can you suggest for the fact that most of the Chinese people live in China proper? Check your answer to this question as you learn more about the Chinese and their country.

Differences in surface. The maps have shown you that there are great differences in surface within the Chinese Republic. The interior is made up of plateaus surrounded by high, rugged mountains, while the eastern portion, bordering the coast, is made up of lowland plains and of mountains much lower than those of the interior. As you would expect, it is the lowland plains that are most crowded with people.

Differences in climate. Turn to the map on page 343 and notice that most of the Chinese Republic lies between the parallels of 20° and 50° north latitude. Thus it extends a little farther north than the United States does, and considerably farther south. As you would expect, then, there are very noticeable differences in the temperatures in the northern and southern parts of the country. In the north the poorer people often suffer greatly from the cold in the winter, while in the south the winter weather is never severe.

You have already noted the differences in rainfall in the republic. The interior has less than 20 inches of rain a year, and parts of it are so dry that they are deserts. Nearly all of China proper, on the other hand, has over 20 inches of rain a year, and much of it has between 40 and 80 inches.

The monsoon winds. The winds which bring most of the rain to China are the summer monsoons. They blow toward the interior of the great continent of Asia during the warmer part of the year, heavily laden with moisture from the Pacific and Indian oceans. The summer monsoons from the Pacific Ocean give China heavy rainfall in summer, just as those from the Indian Ocean give India heavy rainfall at the same season.

Since the interior of the Chinese Republic is bordered by high mountains on the south

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Figure 368. Terraced rice fields in the East China Highlands. Each terrace, or step, is leveled off, and the soil is kept from washing away by a wall of earth. Hills and mountain slopes are terraced in all the rougher parts of southeastern China.

and east, little of the moisture brought by the summer monsoons reaches that part of the country. That is why the interior plateaus have so little rain, and the lack of sufficient rainfall for farming is the chief reason why those regions have so few people.

During the colder part of the year the winter monsoons blow outward from the dry interior of Asia, and therefore China, like India, has much less rain in winter than in summer. Northern China has bitterly cold winter winds from Siberia, which sometimes bring great clouds of dust with them. These cold dust storms are exceedingly unpleasant. In southern China the winter winds from the interior are cool, but that part of the country is so far south that the warmth of the sun makes the winter climate mild. In summer the weather in southern China is hot.

Giving reasons. Sum up some of the facts which you have learned thus far about the Chinese Republic by giving reasons to complete the following sentences:

1. China proper is much more densely populated than the interior plateaus because _____.
2. China proper has sufficient rain for agriculture because _____.
3. Much more of the rain comes in summer than in winter because _____.
4. The interior plateaus suffer from too little rainfall because _____.

2. China Proper

For purposes of study it is helpful to divide China proper into four sections: (1) south China, which includes the lowland of the Si River; (2) middle China, which includes the lowlands bordering the Yangtze River; (3) north China, made up largely of the lowland known as the Plain of China; and (4) Manchuria, made up largely of the Manchurian Lowlands.

China proper is not quite two thirds as large as the United States, yet it has more than three and a half times as many people. Judging from the map on page 346, how do you think most of the people make their living? What products of China remind you of Japan? What mineral resources important in manufacturing has China? How well supplied with railroads does the country seem to be?

A land of farmers. Except in Manchuria, the lowlands of China are so densely populated that almost every acre of land which can be cultivated and which is not used for buildings or roads produces crops, chiefly foodstuffs for the millions of people. At least four fifths of all the people make their living by farming, yet nine tenths of the farms are less than two acres in size; and if a farmer has as many as five acres, he is considered well-to-do.

The Chinese farmers cultivate their little patches of land with the greatest care, for every square foot must be made to produce as much as it possibly can. Plowing is done

with the help of oxen in the north and water buffaloes in the south, but the rest of the farm work is done by hand. In some places even the plows are pulled by men instead of by animals, for there are so many people in China that human labor is very cheap.

The better farm lands are, of course, in the lowlands, but the Chinese also terrace the hillsides and the mountain slopes for crops. Building terraces and keeping them in repair is hard work, but only by cultivating the hillsides and mountain slopes as well as the level lands can so many people manage to make a living by farming; and even so, most of the farmers are very poor. *See Figure 368.*

Except in Manchuria, almost no land in China proper is used for pasture. The Chinese, like the Japanese, cannot afford to keep many cattle or sheep, because as much land as possible must be used to raise food crops, and little can be spared for pasture or forage crops. Pigs, chickens, and ducks are abundant, however, for they can be fed more cheaply than cattle or sheep.

Mineral wealth. China is a land of much mineral wealth. It has abundant coal and good supplies of iron and other metal ores. With these mineral resources it is well prepared to carry on manufacturing, but as yet its industrial growth has been slow. That is chiefly because the Chinese have only recently begun to realize how much their country would benefit by the development of manufacturing. As you visit the different parts of China, you will see modern industrial plants here and there; but you will find that the greater part of the manufacturing is still done by hand in small workshops and in the homes of the people.

Means of transportation. The map shows that China is not well supplied with railroads. Altogether, there are less than 9000 miles of railroads in this great country — less than one twenty-seventh the number of miles of railroads in the United States. Furthermore, most of the roads are so poor that transportation by automobile and motor truck is difficult, and in many parts of the country, impossible. In many sections wheelbarrows and pack donkeys are the chief means of transportation, while in others the roads are good enough for slow-moving carts. *See Figure 369.*

By Ewing Galloway, N. Y.

Figure 369. A Chinese cart of the kind comonly used in the northern part of China. Only a well-to-do Chinese farmer can afford to own a horse and cart.

Fortunately, China has several long rivers which are navigable for good-sized boats, and in the eastern lowlands many canals have been built. But, as you know, transportation by boat is slow at best, and a country with few railroads and poor roads cannot make the best use of its resources.

Some things to explain. Give an explanation for each of the following facts:

1. Chinese farms are very small.
2. Chinese farmers do most of their work by hand.
3. The Chinese terrace hillsides which otherwise would be too steep for farming.
4. Compared with most farming countries, China has few cattle or sheep.
5. Transportation is slow in most parts of China.
6. Labor is cheap in China.

By De Cou from Ewing Galloway

Figure 370. Farmers plowing a rice field in south China. They are using water buffaloes to draw their plows. In what possession of the United States do the farmers use water buffaloes?

South China and Middle China

Mountains and plains. The map shows that much of south China and parts of middle China are mountainous. The mountains are not very high, however, and the people terrace many of the slopes for farming. The larger rivers are bordered by extensive lowland plains, all of which are overcrowded with people.

South China, as you know, has hot summers and mild winters, and even in middle China the winters are usually mild. For this reason most of the farmers of south China and middle China get at least two crops a year from their land.

Rice, silk, and tea. You may think of these two sections of China as lands of rice, silk, and tea, for rice and tea are the most valuable crops, and mulberry trees, both wild and cultivated, provide leaves to feed millions of silkworms. Tea bushes cover the hillsides in many places, and rice is grown in the lowlands and also on terraces on the hillsides. *See Figure 370.*

In all but the northern part of China proper, rice is the chief food of the people just as it is in Japan, and for the same reasons. Can you give the reasons? If not, review what you learned on page 339.

The Chinese cultivate their rice fields with the same painstaking care that the Japanese do, and they produce more rice than any other nation in the world. Nevertheless, the population is so large that additional supplies of rice are imported from Indo-China and Siam.

The production of raw silk is carried on in China in much the same way as in Japan, except that there are fewer filatures and much more of the reeling of the cocoons is done by hand in the farmers' homes. In China, as in Japan, raw silk is the leading export.

The Chinese, like the Japanese, are tea-drinkers, which accounts for the fact that tea is one of their leading crops. In addition to all the tea used within the country, there is a large surplus for export. The better qualities of tea are sent chiefly to England and European Russia, while the poorer qualities are sold to the people in the interior regions of the Chinese Republic.

The lowland of the Si River. By far the most important part of south China is the densely populated valley and delta of the Si River. Find this lowland plain on the map on page 346 (*C4*). What Chinese seaport is at the mouth of one of the distributaries of the Si? What British port is located on an island beyond the delta?

This warm, moist lowland, with its subtropical climate, produces a great variety of crops, but rice and sugar cane are by far the most important. It is also one of the most important Chinese centers for the production of raw silk, for mulberry trees are abundant, and many of the farmers raise silkworms.

Canton. Canton, the largest city of south China, is so overcrowded that more than one tenth of all the people live on the river in boats. Thousands of children are born and brought up on these boats, and never have any other place to live. When they are old enough to crawl about, their mothers put ropes around them and tie them to the boats to prevent their falling overboard. In some of the families both parents go ashore each day to work. Other boat families make their living by carrying goods from one place to another. *See Figure 371.*

Along the streets bordering the river in Canton there are modern buildings, several stories high, which are used as department stores, banks, business offices, and warehouses. If you were to visit the warehouses, you would find some of them filled with Chinese goods for export, and you would notice especially the beautiful silk goods and silk embroideries. Canton is a great center for the reeling of silk, the weaving of silk goods, and the making of silk embroideries, shawls, and scarfs. Can you explain why?

Away from the water front and the chief business section of the city, most of the streets of Canton are narrow lanes bordered by little one-story houses, shops, and workshops built as close together as possible. In many of the homes, as well as the workshops, people are busy weaving and embroidering, carving ivory, stone, and wood, and making jewelry, fans, lanterns, toys, and many other articles such as we see in Chinese stores in our country. There are several modern cotton mills and a few other factories in Canton, but most of the manufacturing is done by hand in the small workshops and in the homes. *See Figure 372.*

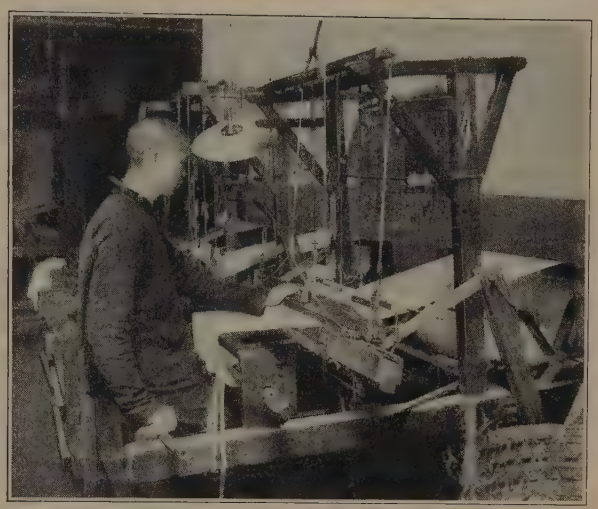

Figure 372. A Chinese workman weaving cotton cloth on a hand loom in a workshop in Canton. Why are large quantities of cotton cloth needed in China?

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Figure 371. A glimpse of the water front at Canton, showing some of the sampans, or small boats, in which so many of the people live. Most of the families who live in boats are very poor.

The trade of Canton. Canton is the leading commercial center of south China and the chief port of that part of the country. Large ocean ships cannot come to its wharves, however, because the harbor is not deep enough. For this reason the goods for export are sent in small boats to the British port of Hong Kong, 78 miles away, and loaded on ocean-going ships there. Coming back to Canton, the small boats bring imported goods which have been unloaded from the ocean ships at

Figure 373. A small Chinese junk on the Yangtze River. Junks are important cargo boats in China, and many of them are much larger than this one.

Hong Kong. From the map on page 346 name the leading exports of Canton. Why is it natural that these products should be shipped from south China to distant lands? Among the imports of Canton rice and cotton are important. Explain why.

The Szechwan Basin. Flowing from west to east through middle China is the Yangtze River. In its middle course it flows through the densely populated Szechwan Basin, a mountain-rimmed plain which is often called the Red Basin because of its red soils. These soils are very fertile, and the climate of the basin is mild and the growing season long. For these reasons it is one of the best farming regions in China, and the farmers raise a great variety of crops: rice, wheat, tea, cotton, sugar cane, and many others. Raw silk is also a very important product of the basin.

Down the Yangtze. Turn to the map on page 346 and trace the Yangtze downstream from Chungking (*B4*), the largest city of the Szechwan Basin. Notice that the river is navigable from some distance above Chungking all the way to the sea. What great seaport is located near its mouth?

There are no east-west railroads in this part of China, and therefore the Yangtze is the chief highway of travel and transportation between the Szechwan Basin and the sea. Chinese junks, such as you see in Figure 373, and river steamers carry passengers and all kinds of goods up and down the Yangtze between the cities and towns along its banks.

East of the Szechwan Basin the Yangtze flows through another plain almost inclosed by mountains, and then winds across the great delta which it has built out into the East China Sea. Like the Szechwan Basin, these plains are rich farming regions and are densely populated. Rice and wheat are the chief grain crops, tea is grown on the inner plain, and large quantities of raw silk are produced on the delta. These lowlands bordering the Yangtze are also the chief cotton-growing regions of China. China stands next to the United States and India in the production of cotton.

An industrial center. On the map on page 346 find the cities of Hankow, Hanyang, and Wuchang (*C3*). Together these cities have more than a million people, and they form one of the few modern industrial centers in China. Among their manufacturing plants are cotton mills, silk filatures, flour mills, and the iron-and-steel plant shown in Figure 374. The iron ore for this plant comes from mines a little farther south.

At Hankow you will find a plant for refining antimony, which is mined in the East China Highlands. Antimony is a cheap white metal which will not tarnish. It is used in making type metal, pewter, and certain other alloys, or mixtures, of metals.

Turn to the map on page 346 and find the place where the antimony is mined. Notice that there are tungsten mines in the same section of the mountains. China produces about three fourths of the world's supply of antimony, and about half the world's supply of tungsten. Tungsten is used chiefly as an

Figure 374. A view of the iron-and-steel plant at Hanyang. Many of the industrial plants in China have been established by foreign manufacturing companies, but these iron-and-steel works at Hanyang belong to a Chinese company. On the map on page 346 find the place where the iron ore for this plant is mined.

alloy in making certain kinds of very hard steel. It is also used in making the filaments, or fine wires, in electric-light bulbs.

The capital of the republic. Farther down the Yangtze is the old city of Nanking, which became the capital of the Chinese Republic in 1928. For many centuries Peking (now called Peiping) was the capital of the Chinese Empire, and from 1912 to 1928 it was capital of the republic. Now that the capital has been changed to Nanking, this city is the center of government. It is also a commercial center, where many foreign companies which carry on business in China have offices.

Shanghai. On the map on page 346 find the city of Shanghai (*D3*). Shanghai has about a million and a half people and is the largest city and the leading seaport of China. It is located on a small stream which flows into the estuary of the Yangtze River. This stream has been deepened so that good-sized ocean ships can reach Shanghai.

The new, or "European," portion of Shanghai has broad, well-paved streets and modern buildings. Along the *Bund*, as the water front is called, there are fine hotels and large stores, business buildings, and warehouses, most of which belong to foreign companies. *See Figure 375.*

In Shanghai, as in Canton, the older part of the city, where the Chinese live, has the narrow, crooked streets and the crowded houses, shops, and workshops of old China. It is a fascinating experience to wander through this old city, to watch the craftsmen at their work, to visit the shops and tea rooms, and to see the jugglers who entertain the people for a small fee.

A great shipping center. Just as Canton owes its growth to the fact that it is the ocean gateway for the rich lowland of the Si River, so Shanghai owes its growth to a location which makes it the ocean gateway for the rich lowlands of the Yangtze basin and the south-

Courtesy of Canadian Pacific Steamships

Figure 375. The Bund, or water front, at Shanghai. Notice the broad boulevard with its parking spaces for automobiles and its "safety platforms" for people who are waiting to get on the street cars. Notice also the many modern buildings. The building which has the clock in the tower is the Shanghai customs house.

ern part of the Plain of China. Its harbor is always crowded with boats of all kinds, from Chinese junks and sampans to great ocean ships from distant lands. On both sides of the river there are docks where ships load and unload every day in the year. When the docks are full, as often happens, ships anchor in the river, and their cargoes are carried to shore in small boats.

Turn to the map on page 346 and name the leading imports of Shanghai. Large quantities of imported goods are loaded on river boats at Shanghai and taken up the Yangtze to Hankow and other interior cities. Coming back down the river, the boats bring raw silk, cotton, tea, and other products from the farm lands in the Yangtze lowlands to be used in Shanghai or to be shipped from there to distant lands.

Manufacturing in Shanghai. In Shanghai there are cotton mills, silk mills, shipbuilding plants, flour mills, and many other industrial plants where thousands of Chinese are learning to carry on manufacturing in Western ways. Why is it natural that industrial plants of the kinds named above should be located at Shanghai? What reason can you give for the fact that Shanghai has been one of the cities to take the lead in developing manufacturing in China?

Sentences to complete. Complete each sentence below by giving reasons:

1. Rice is grown on nearly every farm in south China and middle China because _____.
2. Tea is an important crop in these sections of China because _____.
3. The lowland of the Si River is well suited to the growing of sugar cane because _____.
4. Many farmers in south China and middle China cultivate mulberry trees because _____.
5. The Szechwan Basin is a rich farming region because _____.
6. The Yangtze River is an important highway of travel and transportation because _____.
7. Canton and Shanghai are great seaports because _____.

Figure 376. Chinese farmers working in a field of soy beans. In the background is a field of kaoliang, a variety of millet which is grown extensively in north China for bread grain.

North China and Manchuria

The Plain of China. North of the Yangtze lowlands, between the mountains and the sea, is the Plain of China, another rich farming region crowded with about one hundred million people. This plain has a cooler climate than the lowlands farther south, and so its crops are somewhat different.

Rice and cotton are grown in some parts of the plain, but wheat and other temperate grains are more important crops. Among these grains is millet, which provides food for large numbers of the poorer people. In the peninsula of Shantung, which extends into the Yellow Sea, the raising of silkworms is important.

Among the important crops of north China, and also of Manchuria, are soy beans. These are both a food crop and a money crop. The Chinese eat them as a vegetable, make a sauce from them to flavor their food, and use the oil in cooking as we use lard. They also export large quantities of soy beans and bean cake, chiefly to Japan. *See Figure 376.*

A river-made plain. The reason that the Plain of China is so fertile is that it is made up of fine sands and mud washed from the mountains on the west and spread out in a series of deltas and flood plains. The Hwang River has done most of this work. Find this river on the map on page 346 (*C3*) and trace its course across the plain to the sea. The Chinese word *hwang* means "yellow," and the river gets its name from the fact that it carries so much mud that it is yellowish in color. In building this plain on which so many millions of Chinese people live, the Hwang has shifted its course several times, and its mouth is now far to the north of the point where it entered the sea years ago.

"China's Sorrow." The Hwang is also known as "China's Sorrow" because it often overflows and floods vast areas of this lowland of its own making. Some of the plain is lower than the surface of the river, and the people have built high banks in an effort to keep the stream in its channel. In times of flood, however, the river breaks through the banks just as the Mississippi breaks through its levees.

Each time the Hwang overflows, the mud which it carries settles on the land and forms

Courtesy of Canadian Pacific Railway

Figure 377. One of the freight yards at Peiping, where goods are transferred from one railroad line to another. At the right in the picture is one of the outer gates of Peiping, built long ago.

a coating of new soil for the farmers to use, but the floods often destroy the crops and sweep away the people's houses. At times the flood comes so suddenly that thousands of people are drowned. When great floods occur in China and crops are destroyed, periods of terrible famine follow, and large numbers of men, women, and children starve to death.

Canals and waterways. The Plain of China is covered with a network of waterways. Some of them are old courses of the Hwang and others are canals. The Grand Canal, which is nearly a thousand miles long, was completed more than six hundred years ago. These waterways are important highways of travel and transportation in the plain, and boats move slowly along them carrying farm products to market and passengers from one place to another. In the streams and canals here, and in all parts of China, many fish are caught, and fishing helps greatly to increase the food supply.

Peiping. One of the most interesting cities in the world is Peiping, which for so many centuries was the capital of China. This city was formerly known as Peking. Find it on the map on page 346 (*C3*) and notice its location near the northern margin of the Plain of China. Notice also that Peiping is better served by railroads than most of the Chinese cities, for it can be reached by train from Shanghai, from Mukden, in Manchuria, and from Hankow, in the Yangtze Valley. The railroad which runs southward from Peiping through Hankow will sometime be continued to Canton. At present, however, there is no unbroken north-south railroad line through China. *See Figure 377.*

Peiping is not a seaport and it is not on a navigable river, yet it is the second largest city of China. Its location was chosen by a Chinese emperor of long ago who did not care for advantages for manufacturing or trade, but who wanted a beautiful capital for his seat of government. As years passed, the Chinese emperors built magnificent palaces and temples in the capital city and gathered together many of the most remarkable works of Chinese art.

In approaching Peiping you will see the thick walls which were built long ago to keep out enemies, and the great gates which were always closed and guarded at night. Within the city is an area surrounded by another wall and known as the "Forbidden City." In this area is the palace where the emperors lived with their families and their servants, and where they received representatives of other nations. Very few other people were ever allowed to enter it.

Street scenes in Peiping. Peiping, like the other large cities of China, has its old sections with narrow streets and little one-story houses and its new section with paved streets and modern buildings, some of which are built in Western style and some in Chinese style. Visitors enjoy especially the attractive shops where all kinds of Chinese goods are sold. *See Figure 378.*

Figure 378. Some of the shops in Peiping. Notice their beautifully carved fronts. The one at the left is a silk shop, the one in the middle a candle shop, and the one at the right a perfume shop.

Among the interesting sights in Peiping are the camel trains coming in from the desert regions of Mongolia. They come from hundreds of miles away, loaded with wool and hides, and they go back carrying food and other supplies which the people of Mongolia need. *See Figure 379.*

Some Chinese homes. In Peiping, as in the other cities of China, most of the people are very poor, but there are a few who live in great comfort. Their homes are made up of a number of buildings facing an inner court or garden. Different buildings serve different purposes. A Chinese gentleman's library and living room are often in a building on one side of his court, while the sleeping rooms are in another building on the other side. The food is prepared in a third building and carried by servants to a fourth, which serves as a dining room. In homes of this kind there are beautiful works of art, books, and most of the comforts and luxuries found in wealthy homes in Europe and America.

A center of learning. Peiping is not a great commercial or industrial city, and it owes its importance today to the fact that so much wealth and culture came to center there in the centuries when it was the capital of China. It has an excellent medical school, and in and near the city there are many colleges and other institutions of learning.

The Great Wall. Many visitors to Peiping travel a little farther north to see the Great Wall which the Chinese built more than two thousand years ago to keep out invaders from the northwest. This wall is one of the wonders of the world, for it runs westward for more than 1500 miles, climbing steep mountain slopes and descending into deep river valleys and gorges. *See Figure 380.*

Tientsin. On the map on page 346 find Tientsin, the chief port of north China, and the third largest city of the republic (*C3*). This city is located about 40 miles from the coast on a river which has been made navigable by dredging and straightening. The map shows that it is the northern terminus of the Grand Canal and that it is connected with Peiping, Shanghai, and Mukden by railroads.

Figure 379. A camel train leaving Peiping for Mongolia. Turn to the map on page 343 and see if you can discover a reason why Peiping is the center for trade between Mongolia and eastern China.

Figure 380. A view of the Great Wall of China, showing how it climbs the mountain slopes. During the centuries when the wall was used for protection, it was patrolled by Chinese soldiers.

Because of its railroads and its shipping, Tientsin is a busy commercial center. Boats from other parts of China and from distant lands come to its wharves, bringing goods to be distributed to various parts of north China, and carry away products of that part of the country. Among the leading exports to distant lands are soy beans, bean cake, and raw cotton, which go chiefly to Japan. Can you explain why? Among the imports, cotton goods from Japan and various kinds of manufactured goods from the United States and Great Britain hold high rank.

Like Shanghai, Tientsin is a manufacturing city as well as a seaport, and has cotton mills and many other kinds of manufacturing plants. Long ago this city became a center for the weaving of Chinese rugs, using wool from Mongolia. Rug-making is still the leading industry of Tientsin, and large quantities of modern Chinese rugs are exported to our country.

From Tientsin to Mukden. If we wish to travel from Tientsin to Mukden, in Manchuria, we have a choice of two routes. We may go all the way by train, or we may take a boat from Tientsin to Dairen, and then complete our journey by train. Trace both routes on the map on page 346. What nation controls the port of Dairen?

The Manchurian Lowlands. When we reach the Manchurian Lowlands, we shall be in a region where the winters are much longer and colder than in the other lowlands of China. For centuries the Chinese people have preferred to stay in the warmer parts of their country, even though they were badly crowded there. But every year during the last twenty years about a million Chinese people have left their homes farther south and migrated, or moved, into this northern lowland. This is one of the greatest migrations in human history. It is still going on, and it is probable that many more Chinese people will settle in this region.

New lands to be developed. The new settlers are largely farmers who are buying land,

Figure 381. A Chinese settler's house in Manchuria. The owner of the house is a farmer, and he is making a better living than he did in his old home. Why? At what season was the picture taken?

Figure 382. Harvesting wheat in Manchuria. The farmers are using a tractor which is drawing six mowing machines. Manchuria is the only part of China where farming machinery is in use.

building houses, and turning unused lands into crop lands. It is thought that as yet only about half the land that can be used for farms is cultivated. The principal crops of the region are wheat, millet, barley, and soy beans, and because the region is not yet overcrowded, there is a surplus of foodstuffs for export to Japan and to the more densely populated regions farther south in China. The Chinese are planning to build many more miles of railroads in Manchuria, and thus help still further to develop this great food-producing section of their country. *See Figures 381 and 382.*

Industrial development. Manchuria is fortunate in having coal and iron ore. There are valuable coal mines near Mukden, and iron ore is mined somewhat farther south, between Mukden and Dairen. Here, near the iron mines, there are iron-and-steel plants which belong partly to the Japanese and partly to the Chinese. *See Figure 383.*

The large production of soy beans by the Manchurian farmers has led to the building of many factories for extracting and refining bean oil, pressing bean cake, and making soap. The Japanese port of Dairen is sometimes called the "City of Beans" because such large quantities of soy beans, bean oil, and bean cake are collected there for export. *See Figure 384.*

The largest city of Manchuria. Turn to the map on page 346 and find Mukden again (*D2*). Notice its location on the main line of the Manchurian Railroad, which runs northward from Dairen, joining the southern branch of the Trans-Siberian Railroad at Harbin. Mukden is the largest city and the chief commercial center of Manchuria. It is a city of two parts, one built by the Japanese, who have certain rights there, and the other built by the Chinese.

The Japanese section is the new part of the city, with wide streets and large business buildings, for it has been built since the Japanese have learned Western ways. The Chinese section is the old part of the city. Surrounding it is a high wall with narrow gateways where, in earlier times, soldiers were stationed.

By Burton Holmes from Ewing Galloway, N.Y.

Figure 383. A coal-mining center in southern Manchuria. The mines here are controlled largely by the Japanese, and much of the coal is used to make coke for smelting iron ore.

Photograph from Ewing Galloway, N.Y.

Figure 384. Soy beans and bean cake at Dairen, ready to be shipped away. What country buys large quantities of these products from China?

By Burton Holmes from Ewing Galloway, N.Y.

Figure 385. A business street in the Chinese section of Mukden. Notice the two-wheeled carts and the Chinese signs on the shop fronts.

In some parts of the Chinese section the streets are narrow, and crowded with low buildings of stone or brick covered with plaster. In other parts the streets have been widened and the stores and houses are being remodeled. All the old buildings are dull gray, except where some shopkeeper has used a little bright-colored paint to decorate the front of his store. The new buildings are like those built by the Japanese in their section of the city. *See Figure 385.*

In Mukden, as in other Chinese cities, all kinds of handwork are done in little shops. But Mukden also has its mills and factories, built in recent years. Among them are flour mills, bean-oil mills, cotton mills, and factories where carpets and rugs are made from wool brought from Mongolia.

The rivalry for Manchuria. Manchuria, with its fertile farm lands and its mineral resources, is a region which both the Russians and the Japanese have long wished to control. Both countries have invested money in mines and railroads there, and the Japanese, especially, have done much more to develop the resources of the region than have the Chinese. The Chinese government realizes that Manchuria is of great value, and does not wish to lose it. For this reason, and because the rest of China proper is so greatly overcrowded, the government is doing all it can to encourage Chinese settlers to go to Manchuria.

Some things to explain. Give an explanation for the fact that

1. Wheat is a more important crop than rice in the Plain of China.
2. Manchuria is the only part of China where the farmers use machinery in their work.
3. The southern part of Manchuria has an iron-and-steel industry.
4. Mukden and Dairen have many bean-oil mills.
5. Rug-making is important in Tientsin.
6. Peiping is China's chief railroad center.
7. The Hwang River is often called "China's Sorrow."

Something to discuss. Discuss the following questions with your classmates:

1. Why do the Japanese and the Russians want Manchuria?
2. To which of these nations would Manchuria be most useful, and why?
3. Why are the Chinese anxious not to lose Manchuria?
4. What kind of work are Chinese settlers most likely to choose to do in Manchuria?

Figure 386. Two Mongolians with a camel cart. The cart consists simply of a pair of wheels with a wooden framework on which goods can be strapped. The Mongolians use these carts to transport their tents and other belongings as they move from place to place.

3. Mongolia, Sinkiang, and Tibet

West of China proper are the interior plateaus and mountains of the Chinese Republic. Review what you learned about these regions on pages 355 and 356. What can you say about their climate? Why do they contain only 2 per cent of the people of the republic?

The interior plateaus and mountains are divided politically among three great provinces: Mongolia, Sinkiang, and Tibet. Find these provinces on the map on page 343. Which two border the Soviet Union? In which one is the Gobi Desert? Which two border India? From what you have already learned about the interior of the Chinese Republic, how do you think most of the people of these provinces make their living?

The gateway to Mongolia. On the map on page 346 find the town of Kalgan (*C2*). This town is located in a pass in the mountains, and is the eastern gateway to Mongolia. Camel caravans from the dry regions to the north and west have long used this pass to reach Peiping, and today a railroad from Peiping runs through Kalgan to the great northern bend of the Hwang River. This is the only railroad which enters Mongolia. Elsewhere in the province travel and transportation are carried on by automobile and by camel caravan.

Mongolian nomads. Mongolia is nearly half as large as the United States, yet it is so dry that it has less than one fiftieth as many people. Most of the Mongolians are nomadic people, who wander about with their sheep, cattle, ponies, and camels, always in search of fresh pasture lands. They travel in groups, and wherever they stop to allow their flocks and herds to graze for a time, they set up a village of tents. *See Figures 386 and 387.*

From their flocks and herds the Mongolians obtain most of their food, and large quantities of wool, hides, and skins to sell to the people of China proper. In exchange for these products they buy cotton and woolen cloth, sugar, tea, and other supplies which they need. The people who live on the Plain of China have always dreaded the Mongolian nomads, for in times of greater drought than usual Mongolian horsemen have often invaded the plain and robbed the farming people. It was to keep out these invaders from Mongolia that the Chinese long ago built the Great Wall.

Figure 387. Mongol tents. The tents are made of a framework of poles covered with matting of woven straw, and can be put up and taken down easily.

Figure 388. A Tibetan riding a yak. Yaks are the principal burden-carriers in Tibet, and they also furnish the people with meat, milk, and hides.

The capital of Mongolia. As you would expect, there are few towns in Mongolia. The largest one is Urga, the capital of the province, which is located on an old caravan route from Kalgan to Kiakhta, on the southern border of Siberia. From Kalgan, Urga can be reached by automobile in five days and by camel caravan in thirty-five days. This town is a trading center where the Mongolians exchange wool, hides, and skins for furs from Siberia. Why do they need furs? Locate Urga on the map on page 343 (*J4*). Why is it a convenient place for trade between Siberia and Mongolia?

Sinkiang. Sinkiang is made up largely of the almost rainless regions known as the Zungarian Basin and the Plateau of East Turkestan. Turn to the map on page 118 and find the mountains which nearly surround these dry regions. Sufficient rain falls on the high mountains to give rise to streams which flow down the slopes bordering the deserts of Sinkiang. Because of this, western Sinkiang has a fringe of scattered farming villages along the mountainous margins of the deserts. Here the people keep sheep, and raise excellent crops of wheat, barley, cotton, fruits, and vegetables by means of irrigation.

The only way in which the people of Sinkiang keep in touch with the outside world is through the trade which they carry on with India and the Soviet Union. They have wool and cotton to exchange for sugar, tea, cotton cloth, and other things which they need.

The Plateau of Tibet. On the map on page 118 find the Plateau of Tibet (*G5*). What is its elevation? What kind of land surrounds the plateau? What mountains separate it from the northern plain of India? Prove by the map that all the longer rivers of China, southeastern Asia, and India rise in or near the margins of the Plateau of Tibet.

The Plateau of Tibet is the highest plateau in the world, higher even than the Plateau of Bolivia. Like that South American plateau, it is surrounded by high, rugged mountains, and is therefore very dry. Because of its high altitude, Tibet is also a cold land. Even in summer the days are cool, and the nights are very cold.

Most of the people of Tibet live in the valleys on the southern and southeastern margins of the plateau, where they are somewhat protected from the cold winds. In these valleys they manage to raise a little barley and wheat, and small quantities of vegetables and fruit, but their most valuable possessions are their sheep and their yaks. The yaks are especially valuable, because, like the llamas of Bolivia and Peru, they can work well in the high altitude. *See Figures 388 and 389.*

The people of Tibet carry on a little trade with the people of the eastern lowlands of China. They pack wool and sheepskins on the backs of their yaks and take them eastward to the outer borders of the mountains. There they meet Chinese coolies carrying tea, sugar, cotton goods, and other supplies to be exchanged for the wool and skins from the plateau. There is but little trade between Tibet and India because the Himalaya Mountains are very difficult to cross.

The capital of Tibet is the old city of Lhasa. The people of Tibet have never wanted outsiders to enter their country, and it is often difficult for travelers and explorers to obtain permission to visit Lhasa.

Some things to explain. Explain why

1. Mongolia, Sinkiang, and Tibet are thinly populated.
2. The Mongolians depend on camels for transporting goods, while the Tibetans depend on yaks.
3. Farming is of some importance in Sinkiang.

Figure 389. Yaks in the yard of a small inn in Tibet. They are on their way to the eastern border of Tibet, loaded with sheep's wool which their owner will exchange for supplies from China.

4. China—Past and Present

At the beginning of this chapter you learned that for thousands of years the Chinese lived by themselves and knew little of what was going on in the outside world. During all those years they were isolated, or kept apart, from other nations. Do you know what caused this isolation, and how it finally came to an end?

Land barriers and water barriers. As you know, the densely populated lowlands of China proper are bordered on the west by a vast stretch of high mountains and dry plateaus. Even today travel is difficult in these regions, and for thousands of years people feared to cross them. Thus the mountains and plateaus long formed a broad, uninhabited barrier between China and the countries farther west in Eurasia.

On the south and east, China is bordered by the ocean waters. These too were barriers for many centuries, for until a few hundred years ago there were no ships large enough and strong enough to withstand the ocean storms, and few sailors dared to venture out of sight of land.

Early Chinese civilization. Cut off from contact with the rest of the world by land barriers on the one hand and water barriers on the other, the Chinese developed a civilization all their own. From the earliest times most of the people were farmers. As population increased, there were more and more people to be fed, and since there was little or no trade with the outside world, the farmers had to find ways to make every acre of land produce all that it possibly could. Thus, little by little, China became an overcrowded country of small farms.

During the long period of isolation the Chinese learned how to make all the things they needed, and many of them became very skillful and artistic craftsmen. When Marco Polo, the Venetian traveler, reached China in the thirteenth century, he marveled at the beautiful silks, the fine porcelains, the furniture inlaid with pearl shell, and the carvings in ivory and jade which he found there.

During all these centuries China produced writers and scholars, some of whom were as great as any whom the Western world had produced, but their numbers were very few compared with the millions of people who had no education. Even today four fifths of all the people of China have never had a chance to go to school, and cannot read or write.

The opening-up of China. It was several hundred years after Marco Polo's visit to China before the Chinese came to have much interest in the Western nations. In the meantime, the Western nations had been making wonderful progress in science and engineering. Large ships were built which could cross and recross the oceans safely. The steam engine was invented, and steam was put to work to help man in manufacturing and in transportation. The Western nations began to take a deep interest in all distant lands, for they needed to discover new sources of raw materials and new markets for manufactured goods.

These changes led the Western nations to attempt to carry on trade with China. The first efforts, however, were unsuccessful, for the Chinese were satisfied to continue living by themselves, and they did not welcome foreigners or foreign trade. At last, in 1842, the British were successful in getting the Chinese government to sign a treaty allowing foreign ships to trade at Canton, Shanghai, and three other Chinese ports. This was the end of the period of Chinese isolation, and the beginning of the opening-up of China to trade and other contacts with the outside world.

Chinese trade. Today the ships of all nations are allowed to enter all the Chinese ports, and China carries on trade with many distant lands. The Chinese exports of highest value are raw silk, soy beans, bean cake, raw cotton, and tea. What class of people in China produce all these leading exports?

Among the imports, cotton goods, machinery, and other manufactures hold the leading place, followed by foodstuffs, especially rice and sugar. Large quantities of mineral oils are also imported, chiefly from the United States.

More trade is carried on with Japan than with any other country. That is partly because Japan is close by, but mostly because the Japanese need the raw materials which the Chinese have for export, and because they can supply many of the manufactured goods which the Chinese need. Next to Japan, our own country and Great Britain have the largest shares in Chinese trade.

The new China. Ever since 1912, when the Chinese Empire became the Chinese Republic, there have been wars within the country, and it has been difficult to establish a strong central government. Yet these years have seen many changes in China, and much progress in education, business, manufacturing, and foreign trade.

Each year Chinese students have come to the United States to study in our schools and colleges, and in this way have learned Western ways of living and working. Returning to their own country to teach, to go into business, or to take government positions, they have become leaders in introducing modern ways of doing work.

Little by little, farming methods are being improved, mines are being opened, factories are being established and equipped with modern machinery, railroads are being built, roads are being improved, and foreign trade is being increased. Schools, which were long found only in the cities, are being opened in the country districts, and in many of them mothers and fathers are learning to read and write in the same classes with their children.

It is never safe to predict just what will happen in any country in the world, but it seems now as if China, with its wealth of natural resources, and with its industrious people now awakening to Western ways, must certainly become more prosperous, and will probably play a much greater part in the affairs of the world in the future.

Special credit work. Try to find a book which tells about Marco Polo, and describe his visit to China to your classmates.

Finding contrasts. You have learned that China is a land of great contrasts. Describe the contrasts listed below, using the pictures referred to as a help.

1. Contrasts in surface: Figures 368 and 382.
2. Contrasts in methods of doing farm work: Figures 370, 376, and 382.
3. Contrasts in means of transportation: Figures 366, 367, 369, 373, 377, 379, 389.
4. Contrasts in methods of carrying on manufacturing: Figures 372 and 374.

Giving reasons. Complete the following sentences by giving reasons:

1. Ninety-eight per cent of the people of the Chinese Republic live in China proper because _____.
2. China long ago became an overcrowded country of small farms because _____.
3. Even today farming is far more important in China than manufacturing or commerce because _____.
4. In many parts of China travel and transportation are slow and difficult because _____.
5. The larger rivers of China are of great value to the people because _____.

Something to prove. You have learned that China has only just begun to carry on manufacturing in modern ways. By answering the questions below prove that it has great advantages for the development of manufacturing industries.

1. What mineral resource is sufficiently abundant in China to supply increasing numbers of mills and factories with power?
2. What three raw materials produced in various parts of the Chinese Republic can be used to increase the textile-manufacturing industries?
3. What advantages has China for increasing its manufactures of iron and steel products?
4. Why do manufacturers in China have no trouble in getting workers for their mills and factories?
5. Why does China itself provide large home markets for manufactured goods?
6. What advantages has China for marketing manufactured goods in foreign countries?

Naming cities. Name each Chinese city described below, and answer the questions about it.

1. The largest city and leading seaport of China. Why is it a great seaport? an important manufacturing city?
2. The second largest city of China, and for many centuries the capital of the country. In what part of China is it located? Why is it the chief center of wealth and culture in China?
3. The chief seaport of north China. For what densely populated lowland region is it the ocean gateway? Of what famous inland waterway of China is it the northern terminus?
4. The chief seaport of south China. For what densely populated lowland is it the ocean gateway? Why is it an important center for the making of silk goods? Why do large numbers of its people live in boats?
5. The three cities which form an industrial center in the Yangtze Valley. Why are they well located to manufacture cotton goods? silk goods? iron and steel?
6. The capital of the Chinese Republic. On what river is it located?
7. The largest city of Manchuria. Why is it a center for flour-milling? for the making of bean oil?
8. The seaport of Manchuria controlled by the Japanese. What are its chief exports?

Some things to explain. 1. Give as many reasons as you can why the Chinese lived by themselves for so many hundreds of years, knowing almost nothing of the outside world.

2. Explain what happened in the outside world to make Great Britain and other Western nations anxious to open up China to foreign trade.
3. Give what you think may be the reasons why the Chinese preferred to go on living by themselves.
4. Describe some of the changes which have come about in China since the Chinese began to learn Western ways. Explain how the Chinese have benefited by these changes.
5. Explain why (1) the leading exports of China are products of the farms; (2) the leading imports are cotton goods; (3) rice ranks high among the imports in spite of the fact that China is a great rice-growing country.

THE POLAR REGIONS

Foreword. As you know, the north pole and the south pole are the northernmost and southernmost points on the earth's surface. They are directly opposite each other, and the north pole is the same distance north of the equator as the south pole is south of the equator. Do you know how the polar regions, or the regions surrounding the two poles, differ from each other? The maps opposite this page will help you to answer this question.

The north polar region. The north pole is located in the midst of the Arctic Ocean, which is almost surrounded by the continents of the Northern Hemisphere. Prove by the map that the only broad opening to the Arctic Ocean is between Greenland and Europe.

For hundreds of miles outward in all directions from the north pole the Arctic Ocean is covered with ice the year round. The ice is very thick; but as it drifts with the winds and the currents, it cracks and breaks, and is often crumpled into long, high ridges. Because of the ice, it is impossible for any ship to make its way to the north pole.

Many explorers have tried to reach the north pole, but only a few have been successful. The first man to succeed was Rear Admiral Robert E. Peary, an American naval officer. Taking a negro and four Eskimos with him as companions, and dog sledges to carry supplies of food, he crossed the frozen polar sea and reached the north pole on April 6, 1909. Trace his route on the map.

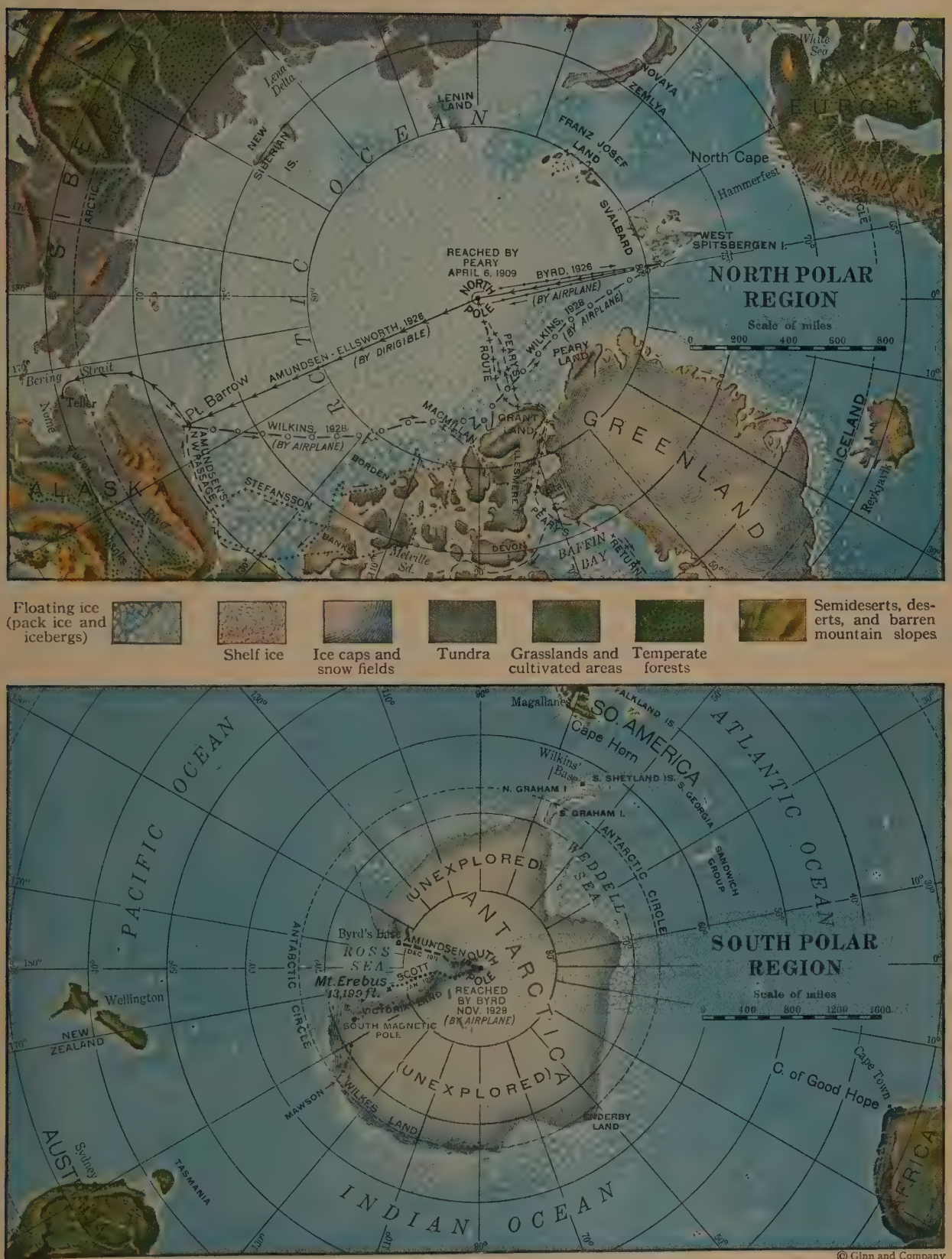
Seventeen years passed before anyone again reached the north pole. The man who made the second successful trip was another American naval officer, — Rear Admiral Richard E. Byrd. With one companion he flew in an airplane from Svalbard (Spitsbergen) to the north pole and back in about eighteen hours in May, 1926. In the same month Captain Roald Amundsen, a Norwegian explorer, and a group of companions flew in a dirigible from Svalbard to Point Barrow, in Alaska, passing over the north pole on their trip. Trace the routes of Byrd and Amundsen on the map.

North polar borderlands. You have already learned that the borderlands of the Arctic Ocean in Alaska, the mainland of Canada, and Eurasia (except the northwestern coast of Scandinavia) are cold treeless plains known as the tundra. Because the tundra is low land almost at sea level, the snow and ice which cover it most of the year melt away in the short Arctic summer, and grasses and flowering plants make their appearance for a few weeks.

Greenland and the northern islands belonging to Canada are higher, and because of this they are covered with ice and snow the year round. Only in a few scattered spots along their coasts is the land free from its covering of ice and snow during the summer.

You have also learned that the Arctic borderlands are very thinly populated, and that the people get their living by herding reindeer or by hunting the wild animals which live in the sea and on the land in these cold parts of the earth. Name the people of the polar borderlands of North America; of Europe; of Siberia. Why do these groups of people live nomadic lives?

On the upper map opposite this page find Etah, on the coast of Greenland, and Hammerfest, on the coast of Norway. Etah is an Eskimo village, and is the northernmost permanent settlement in the world. Hammerfest is the northernmost permanent settlement of white people in the world. What reason can you give for the fact that the extreme northwestern coast of Norway is not too cold for white people to make permanent homes there?



Floating ice (pack ice and icebergs)

Shelf ice

Ice caps and snow fields

Tundra

Grasslands and cultivated areas

Temperate forests

Semideserts, deserts, and barren mountain slopes

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The scale of the North Polar map is approximately twice that of the South Polar map

W

The south polar region. The map shows that the south polar region is quite different from the north polar region, for most of the area within the antarctic circle is occupied by the great mass of ice-covered land which we call Antarctica. The south pole is in this southern continent. Antarctica is larger than Europe or Australia, but there are no people living there. From the map on page 375 tell which one of the inhabited continents extends farthest south toward Antarctica. Name the southernmost settlement in that continent.

South polar explorations. It is only a short time since men began to explore this great southern continent, and even now vast stretches of it are unknown. The first men to catch glimpses of the land in this part of the world were those who went to the Far South on sealing trips and whaling trips. Their reports led to the sending out of exploring expeditions from the countries of the Northern Hemisphere, and the outlines of Antarctica are now fairly well mapped.

In 1911 two exploring parties set out to find the south pole. One was headed by Captain Amundsen, and the other by Captain Robert F. Scott, a British naval officer. Amundsen and his companions reached the pole in December, 1911, and Scott and his party reached it five weeks later. Trace their routes on the map on page 375. Notice that both parties crossed the ice which fills the inner half of Ross Sea. This is a solid sheet of ice several hundred feet thick, and it covers an area as large as the British Isles.

No further attempt was made to reach the south pole until 1929. In that year Rear Admiral Byrd headed a large exploring expedition which made its base, or headquarters, on the margin of the Ross Sea ice barrier. In November Byrd and three companions flew in an airplane from their base to the pole and back in nineteen hours. This flight was much more dangerous than the one to the north pole, for the plane had to fly over high mountain ranges and through narrow mountain passes which were almost hidden in fog.

A continent buried under ice. From the reports which explorers have brought back from the south polar region we believe that Antarctica is a huge plateau much of which is at least 6000 feet in elevation. Most of it is buried under a thick cap of ice and snow, and so it is impossible to tell just what the surface beneath may be. Here and there snow-capped mountain ranges from 10,000 to 15,000 feet in elevation tower above the surface of the ice cap, and moving slowly down their slopes are great glaciers.

In places along the coast there are stretches of bare, rocky land. Along much of the coast, however, the ice cap reaches the sea, and it is hard to tell where the land really ends. Since the ice is always moving slowly toward the sea, huge blocks break from its outer margin and float off into the ocean, forming icebergs.

Whaling grounds in the Far South. Antarctica itself has no commercial value, but in the waters surrounding it there are large numbers of seals and whales. For more than a century the South Shetland Islands and South Georgia have been important centers of the sealing and whaling industries, and today seventy per cent of all the whales caught in the world come from the cold waters of the Far South. The Norwegians, as you know, are leaders in the whaling industry.

Sentences to complete. 1. No ships can reach the north pole because _____.

2. The northernmost permanent settlement in the world is ____ in _____. The people of this village are _____.

3. The northernmost permanent settlement of white people is _____ in _____.

4. Antarctica is uninhabited because _____.

5. The Norwegians send the most ships to the Far South because _____.

INTERNATIONAL RELATIONS

Our study of geography has shown us that the conditions which influence the lives and work of the people of the earth are constantly changing. For thousands of years the mountains, the deserts, and the oceans were barriers to travel. During that period of history progress was slow, and people went on doing about as their ancestors had done before them.

In those early times, when the various nations were more or less isolated, most of the people engaged in the simpler occupations such as hunting, fishing, or farming. When men began to use steam power and then electricity, a new civilization developed. This new civilization brought with it the development of manufacturing on a large scale, and this, in turn, led to the demand for raw materials from various parts of the world and the need for world markets for manufactured goods.

A period of wonderful progress in science and engineering followed, and men invented new means of transportation. They built railroads, automobiles, airplanes, and larger and stronger ships. Little by little, these new and better means of transportation overcame the barriers which had kept the people of the world apart.

Today mail is distributed by all the leading nations of the world. Cable messages, telegrams, telephone messages, and radio messages are sent back and forth across international boundaries, or boundaries between countries, and across the oceans. All the advanced people of the earth coöperate with one another in the development of rapid means of communication.

We have organizations such as the International Red Cross which assist people throughout the world in times of misfortune. When disasters such as floods, fires, earthquakes, or volcanic eruptions occur, people in many different countries contribute money and send workers to help those who have lost their homes and their property. The spirit of good will and coöperation among the peoples of the world is growing stronger every year.

Many students of one country go to another to complete their studies. In the colleges, universities, and technical schools of the United States alone there are at least 10,000 foreign students every year. Professors and teachers from one country exchange positions with those of another, and thus, through education, a better understanding of the customs of the different countries is coming about.

We have learned that several of the leading nations are doing much to develop the resources and help the people in the backward countries of the world. They assist the native people by establishing good government, improving health conditions, opening schools, and introducing modern methods of farming, mining, and carrying on trade.

We are coming to see more and more clearly that helpful coöperation between all the nations of the world is desirable, for backwardness, disasters, and misfortunes in any part of the world lessen the prosperity of the rest of the world. Nations can no longer live by themselves, for the days of isolation have passed.

In our international relations it is important that the people in each country shall have an intelligent sympathy for the people of all the other countries. Such sympathy depends on a knowledge of the living conditions in the various parts of the world, and on a kindly point of view. These, in the end, will do more than anything else to maintain peace and good will among the nations of the earth.

Turn over to page 380.

KEY TO NUMBERS

North America

1. British Honduras
2. Costa Rica
3. Guatemala
4. Honduras
5. Nicaragua
6. Panama
7. Salvador

South America

1. British Guiana
2. Dutch Guiana
3. Ecuador
4. French Guiana
5. Paraguay
6. Uruguay

Europe

1. Albania
2. Austria
3. Belgium
4. Bulgaria
5. Czechoslovakia
6. Denmark
7. England
8. Estonia
9. Greece
10. Hungary
11. Irish Free State
12. Latvia
13. Lithuania
14. Netherlands
15. Northern Ireland
16. Portugal
17. Rumania
18. Scotland
19. Switzerland
20. Wales
21. Yugoslavia

Africa

1. Ashanti and Gold Coast
2. Bechuanaland
3. British Somaliland
4. Eritrea
5. French Somaliland
6. Italian Somaliland
7. Liberia
8. Nyasaland
9. Portuguese Guinea
10. Sierra Leone
11. Tunisia
12. Uganda

Asia

1. Bhutan
2. British Malaya
3. Irak
4. Nepal
5. Oman
6. Palestine
7. Syria
8. Trans-Jordan
9. Yemen

Map Plate, Patented July 5, 1921 · Method of Making Maps, Patented July 5, 1921

AREAS AND POPULATIONS OF THE

NORTH AMERICA

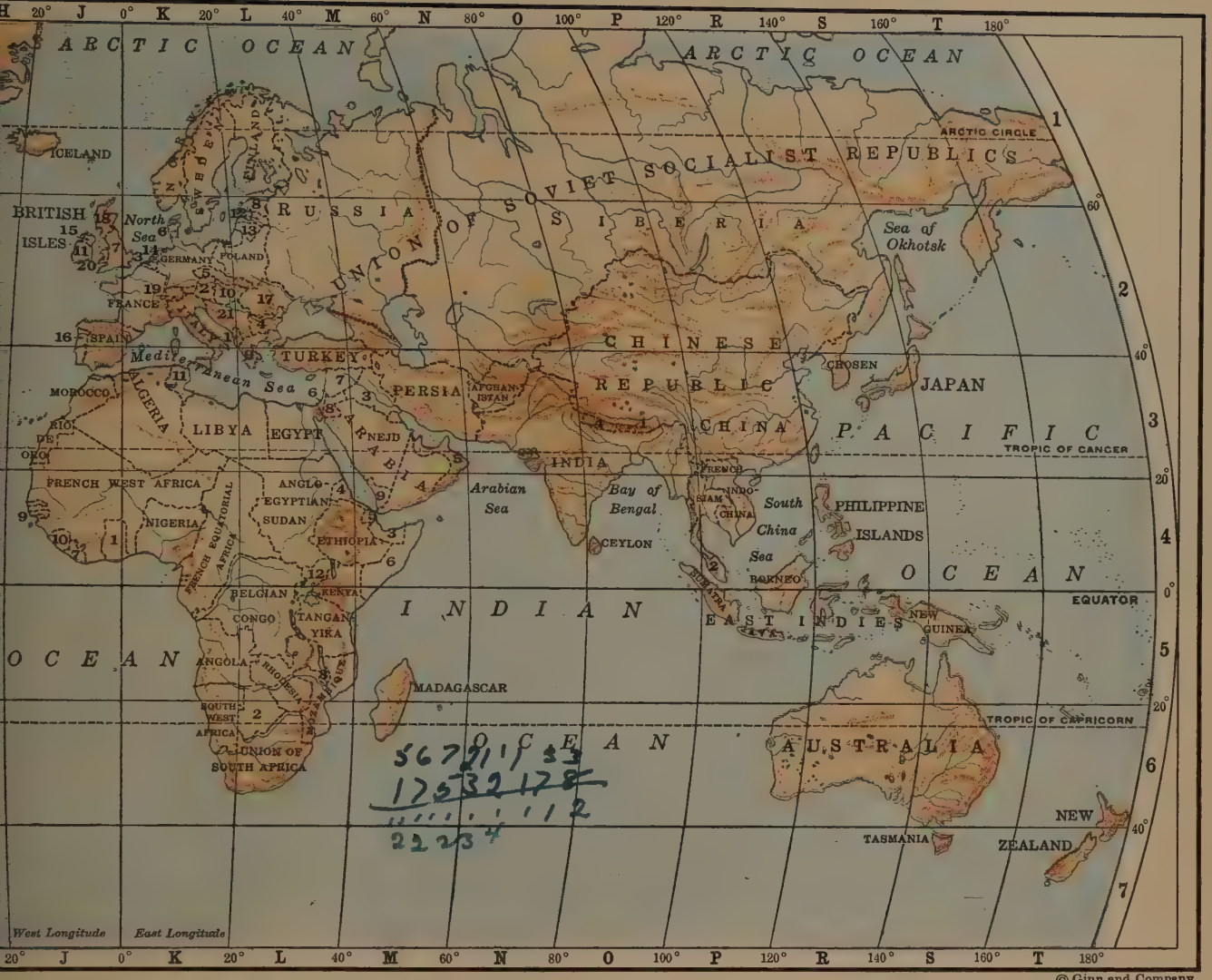
	AREA IN SQUARE MILES	POPULATION
Alaska	590,884	58,758
British Honduras	8,598	48,584
Canada	3,684,723	9,519,220
Costa Rica	23,000	471,524
Cuba	44,164	3,573,850
Greenland	827,300	14,355
Guatemala	42,353	2,119,165
Honduras	44,275	700,811
Labrador	110,000	3,977
Mexico	767,198	15,501,684
Newfoundland	42,734	262,177
Nicaragua	51,660	650,000
Panama	32,380	446,000
Salvador	13,176	1,634,000
United States	3,026,789	122,698,190

SOUTH AMERICA

	AREA IN SQUARE MILES	POPULATION
Argentina	1,153,119	10,312,189
Bolivia	514,155	2,820,119
Brazil	3,285,318	39,695,000
British Guiana	89,480	306,844
Chile	290,084	4,024,938
Colombia	440,846	7,000,000
Dutch Guiana	54,291	142,896
Ecuador	109,978	2,000,000
French Guiana	34,740	47,341
Paraguay	171,814	829,969
Peru	532,047	5,000,000
Uruguay	72,153	1,696,000
Venezuela	393,874	3,026,878

EUROPE

	AREA IN SQUARE MILES	POPULATION
Albania	17,374	833,618
Austria	32,369	6,534,481
Belgium	11,755	7,932,077
Bulgaria	39,814	5,483,125
Czechoslovakia	54,207	14,356,600
Denmark	16,568	3,434,555
England	50,874	35,681,019
Estonia	18,362	1,117,270
Finland	132,608	3,582,406
France	212,659	40,960,000
Germany	180,982	62,410,619
Greece	49,912	6,204,684
Hungary	35,875	8,525,725
Iceland	39,709	103,317
Irish Free State	26,592	2,971,992
Italy	119,710	40,796,000
Latvia	24,440	1,883,189
Lithuania	21,683	2,286,368
Netherlands	13,320	7,625,938
Northern Ireland	5,994	1,248,000
Norway	124,964	2,787,827
Poland	149,958	30,213,000
Portugal	35,490	6,032,991
Rumania	122,282	17,393,149
Scotland	30,405	4,882,497
Soviet Russia	1,821,353	126,128,200
Spain	190,050	21,338,381
Sweden	173,154	6,087,923
Switzerland	15,940	3,987,000
Wales	7,466	2,205,680
Yugoslavia	96,134	12,017,323



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PRINCIPAL COUNTRIES OF THE WORLD

ASIA

	AREA IN SQUARE MILES	POPULATION
Afghanistan	245,000	8,000,000
Arabia	1,000,000	7,000,000
Bhutan	18,000	300,000
British Malaya	56,603	3,864,413
Ceylon	25,332	5,288,792
Chinese Republic	4,279,170	442,000,000
Chosen	84,949	19,522,945
Dutch East Indies	788,000	51,881,862
French Indo-China	285,000	20,700,000
India	1,805,332	318,942,480
Irak	143,250	2,849,282
Japan	166,340	59,940,576
Nepal	54,000	5,600,000
Palestine	10,000	882,000
Persia	628,000	9,000,000
Philippine Islands	115,026	11,744,172
Siam	200,148	9,831,000
Soviet Russia	6,294,901	20,810,200
Syria	60,000	2,046,857
Taiwan	13,840	3,994,884
Trans-Jordan		260,000
Turkey	494,538	13,660,275

AFRICA

	AREA IN SQUARE MILES	POPULATION
Algeria	847,500	6,063,496
Anglo-Egyptian Sudan	1,008,100	6,469,041
Angola	484,800	2,481,956
Ashanti and Gold Coast	80,000	2,078,043
Bechuanaland	275,000	152,983
Belgian Congo	918,000	8,500,000
British Somaliland	68,000	344,700
Egypt	383,000	14,186,898
Eritrea	45,754	402,793
Ethiopia	350,000	10,000,000
French Equatorial Africa	912,049	3,127,707
French Somaliland	5,790	85,778
French West Africa	1,247,191	13,541,611
Italian Somaliland	190,000	1,200,000
Kenya	225,100	2,736,517
Liberia	43,000	2,000,000
Libya	1,185,640	804,910
Madagascar	241,094	3,621,342
Morocco	218,525	5,309,146
Mozambique	428,132	3,482,914
Nigeria	335,700	18,765,690
Nyasaland	37,890	1,306,934
Portuguese Guinea	22,000	350,000
Rhodesia	436,950	2,240,729
Northern	287,950	1,244,761
Southern	149,000	995,968
Rio de Oro	109,200	495
Sierra Leone	31,000	1,541,000
Southwest Africa	311,820	258,905
Tanganyika	373,500	4,323,300
Tunisia	48,300	2,159,708
Uganda	94,204	3,157,008
Union of South Africa	471,917	6,928,580

AUSTRALASIA

	AREA IN SQUARE MILES	POPULATION
Australia	2,974,581	6,262,720
Borneo	237,976	2,024,590
Java and Madura	50,745	37,384,343
New Guinea	337,684	885,242
New Zealand	103,568	1,344,469
Sumatra	163,138	5,994,859

CONTINENTS

	AREA IN SQUARE MILES	POPULATION
Africa	11,500,000	140,000,000
Antarctica	5,000,000	
Asia	17,250,000	1,046,762,427
Australia	2,974,581	6,262,720
Europe	3,796,000	425,000,000
No. America	8,300,000	162,390,731
So. America	7,700,000	76,343,126

A General Review

A map test. 1. On an outline map of Europe print these names in the correct places, doing the work from memory.

Atlantic Ocean	Apennine Mts.
Arctic Ocean	Ural Mts.
Mediterranean Sea	Caucasus Mts.
North Sea	Rhine River
Baltic Sea	Danube River
Black Sea	Seine River
Caspian Sea	Elbe River
Alps	Volga River
Carpathian Mts.	Vistula River
Pyrenees	Rhône River
Sierra Nevada	Po River

2. Print the name of each European country in the correct place.

3. When you have finished, check your map by the map on pages 192–193 to make sure you have made no mistakes.

Matching countries and capitals. Below is a list of the capitals of the countries which are wholly or partly in Europe. Name the countries in the order in which the capitals are listed.

Paris	London	Belgrade	Copenhagen
Oslo	Berlin	Angora	The Hague
Riga	Prague	Brussels	Helsingfors
Rome	Madrid	Warsaw	Bucharest
Revel	Vienna	Lisbon	Stockholm
Sofia	Athens	Kovno	Budapest
Bern	Dublin	Moscow	

Some things to explain. Explain as fully as you can why

1. Great Britain, France, Germany, and Belgium are important manufacturing countries.

2. Norway, Sweden, Finland, the Baltic countries, and European Russia are able to supply other countries with lumber, wood pulp, and paper.

3. France, Germany, Denmark, and the Netherlands are important farming countries.

4. Italy and Switzerland, with no coal and little iron ore, are manufacturing countries.

5. Spain, with abundant coal and iron ore, is not a great manufacturing country.

6. Czechoslovakia is one of the important manufacturing countries of Europe.

7. Spain, Portugal, Italy, and Greece export fruits, nuts, wines, and olive oil.

8. Norway, Great Britain, Denmark, and the Netherlands are important fishing countries.

9. Yugoslavia and Rumania are the only two Balkan countries which export grain.

10. The southern part of European Russia is one of the world's great wheat-growing regions.

11. Poland, Rumania, and European Russia are able to supply some of the mineral oils needed in the other European countries.

12. The resources of the European part of the Soviet Union are much more fully developed than those of the Asiatic part.

13. The internationalized rivers of Europe are a great help to Switzerland, Austria, Hungary, and Czechoslovakia.

14. Great Britain has the largest fleet of merchant ships of any country in the world.

A map test. 1. On an outline map of Asia print the following names in the correct places, doing the work from memory.

Pacific Ocean	Indus River
Indian Ocean	Lena River
Arctic Ocean	Ob River
Lake Aral	Yenisei River
Caspian Sea	Tigris River
Red Sea	Euphrates River
Persian Gulf	Himalaya Mts.
Yangtze River	Ural Mts.
Hwang River	Caucasus Mts.
Brahmaputra River	Philippine Islands
Ganges River	East Indies

2. Print the name of each Asiatic country in the correct place.

3. When you have finished, check your map by the map on page 343 to make sure that you have made no mistakes.

Naming capitals. Name the capital of each of the Asiatic countries listed below:

Siam	Afghanistan
India	Chinese Republic
Persia	Japanese Empire
Irak	Dutch East Indies
Ceylon	Philippine Islands

Topics for discussion. Following are some topics which you will find it interesting and worth while to discuss with your classmates.

1. Why so many millions of people are able to make a living in India, in China proper, and in Japan.

2. Why Siberia, southwestern Asia, and the interior of the Chinese Republic are so thinly populated.

3. Why the British regard India as one of the most valuable of all their possessions.

4. Why so many of the Western nations are deeply interested in developing the resources of the Orient, and in carrying on trade with the Oriental nations.

5. Why Japan is the only Oriental country which ranks among the half-dozen most powerful countries of the world today.

6. What possibilities there are that China may in time win for itself a place among the most prosperous and powerful countries of the world.

A map test. 1. On an outline map of Africa print the following names in the correct places, doing the work from memory.

Mediterranean Sea	Sahara Desert
Suez Canal	Congo River
Red Sea	Nile River
Atlantic Ocean	Niger River
Gulf of Guinea	Zambezi River
Indian Ocean	Lake Victoria
Atlas Mts.	Lake Tanganyika

2. Print the names of the three independent countries of Africa in the correct places.

3. Print the names of the larger British possessions, French possessions, and Italian possessions, and the name of the Belgian possession in the correct places.

4. When you have finished, check your map by the map on page 98 to make sure that you have made no mistakes.

Some questions about Africa. 1. What reasons can you give for the fact that the European nations have been so eager to obtain possessions in Africa?

2. Why have most of the native peoples of Africa been unable to remain independent of European control?

3. What problems do the Europeans face in developing the resources of the hot, rainy parts of Africa?

4. What parts of Africa are best developed today, and why?

Something to prove. In resources, occupations, and trade Australia and New Zealand are more like the countries of temperate South America than like any other parts of the world. Give as many facts as you can to prove that this is true.

A city test. 1. Write down the names of the cities described below. When you have finished, you will have a list of the fifteen cities of the Old World which have over a million people.

(1) The capital of the British Empire.
(2) The capital of Germany.
(3) The capital of France.
(4) The largest city of Japan.
(5) The capital of the Union of Soviet Socialist Republics.
(6) The capital of Japan.
(7) The capital of Austria.
(8) The Baltic seaport of the Soviet Union.
(9) The leading seaport of China.
(10) The leading seaport of India.
(11) The western seaport of India.
(12) The largest city of Australia.
(13) The leading seaport of Germany.
(14) The capital of Egypt.
(15) The leading seaport of Scotland.

2. There are only eight cities in the New World with more than a million people. Six of them are in the United States. Try to make a list of these six cities from memory. Then check your list by the figures on page 385 and correct it if necessary.

3. The other two cities in the New World with over a million people are the capital of Argentina and the capital of Brazil. Give their names.

4. Among these twenty-three cities of the world as a whole, how many are capitals of countries? How many are seaports? How many are lake ports? How many are river ports?

Map Plate, Patented July 5, 1921 · Method of Making Maps, Patented July 5, 1921

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POPULATION OF LARGEST CITIES IN COUNTRIES OF THE OLD WORLD

EUROPE

Austria

Graz	152,706
Linz	102,081
Vienna	1,857,400

Balkan Countries

Athens	452,919
Salonika	236,526
Sofia	213,162

Baltic Countries

Kovno	95,771
Revel	127,000
Riga	339,997

Belgium

Antwerp	300,001
Brussels	815,198
Ghent	163,207
Liége	168,823

Czechoslovakia

Bratislava	93,189
Brünn	221,758
Ostrova Moravská	113,709
Pilsen	88,416
Prague	676,657

Denmark

Copenhagen	587,150

Finland

Helsingfors	220,904

France

Bordeaux	256,026
Havre	158,022
Lille	201,921
Lyon	570,840
Marseille	652,196
Nantes	184,509
Nice	184,441
Paris	2,871,429
St. Étienne	193,737
Strasbourg	174,492
Toulouse	180,771

Free City of Danzig

Danzig	230,000

Germany

Berlin	4,024,165
Bremen	294,966
Breslau	557,139
Chemnitz	331,655
Cologne	700,222
Dortmund	321,743
Dresden	619,157
Düsseldorf	422,633
Essen	470,524
Frankfurt on Main	467,520
Hamburg	1,079,126
Hannover	422,745
Leipzig	679,159
Munich	680,704
Nürnberg	392,494
Stuttgart	341,967

Great Britain

Birmingham	952,800
Bradford	293,200
Bristol	385,700
Cardiff	225,600
Dundee	174,800
Edinburgh	426,300
Glasgow	1,060,500
Hull	296,600
Leeds	482,600
Leicester	245,000
Liverpool	872,900
London	4,541,000
Manchester	751,900
Newcastle on Tyne	288,500
Nottingham	265,700
Sheffield	524,900

Hungary

Budapest	971,169

Ireland

Belfast	415,151
Dublin	316,693

Italy

Bologna	240,020
Catania	289,644
Florence	277,688
Genoa	624,659
Milan	941,070
Naples	966,423
Palermo	444,861
Rome	877,289
Trieste	252,517
Turin	570,173
Venice	253,608

Netherlands

Amsterdam	734,884
Rotterdam	571,842
The Hague	416,179

Norway

Bergen	91,443
Oslo	258,483

Poland

Krakow	183,706
Lemberg	219,388
Lodz	451,974
Posen	184,756
Vilna	214,600
Warsaw	936,713

Portugal

Lisbon	529,524
Oporto	215,625

Rumania

Bucharest	345,628
Kishinev	114,100

Spain

Barcelona	760,348
Madrid	808,366
Seville	215,107
Valencia	267,346

Sweden

Göteborg	233,303
Malmö	117,197
Stockholm	464,699

Switzerland

Basel	141,650
Bern	109,020
Geneva	126,700
Zürich	215,460

Turkey

Constantinople	673,029

Union of Soviet Socialist Republics

Dniepropetrovsk	233,001
Kharkov	417,186
Kiev	513,789
Leningrad	1,614,008
Moscow	2,025,947
Odessa	420,888
Rostov	308,224
Saratov	215,369

Yugoslavia

Belgrade	250,000
Zagreb	130,000

ASIA

British Malaya

Penang	123,069
Singapore	350,355

Ceylon

Colombo	244,163

Chinese Republic

Amoy	300,000
Canton	746,300
Changsha	535,800
Chungking	623,300
Dairen	222,400
Foochow	314,900
Hangchow	380,000
Hankow	289,804
Hanyang	456,312
Nanking	360,500
Ningpo	284,300
Peiping (Peking)	811,138
Shanghai	1,500,000
Soochow	500,000
Tientsin	800,000
Wenchow	202,700
Wuchang	597,967

Dutch East Indies

Batavia	307,606
Surabaya	255,124

French Indo-China

Binhdinh	147,199
Cholon	198,713
Hanoi	103,235
Saigon	123,550

India

Ahmadabad	274,007
Bangalore	237,496
Bombay	1,175,914
Calcutta	1,327,547
Cawnpore	216,436
Delhi	304,420
Hyderabad	404,187
Karachi	216,883
Lahore	281,781
Lucknow	240,566
Madras	526,911
Poona	214,796
Rangoon	341,962

Japan

Hiroshima	195,731
Keijo (Seoul)	306,363
Kobe	644,212
Kyoto	679,963
Nagoya	768,558
Nagasaki	189,071
Osaka	2,114,804
Tokyo	1,995,567
Yokohama	518,902

Philippine Islands

Manila	285,306

Siam

Bangkok	550,000

Southwest Asia

Aleppo	140,000
Bagdad	145,000
Beirut	80,000
Damascus	170,000
Isfahan	100,000
Jerusalem	62,678
Mecca	70,000
Meshed	85,000
Mosul	60,000
Resht	80,000
Tabriz	180,000
Teheran	240,000

Union of Soviet Socialist Republics

Baku	452,808
Irkutsk	98,964
Novo-Sibirsk	120,701
Omsk	161,615
Samarkand	105,206
Sverdlovsk	136,404
Tashkent	323,613
Tiflis	292,973
Vladivostok	107,977

AFRICA

Alexandria	573,063
Algiers	226,218
Cairo	1,064,567
Cape Town	212,997
Casablanca	106,608
Durban	151,642
Johannesburg	288,131
Marrakesh	149,263
Oran	150,301
Port Said	104,603
Tunis	185,996

AUSTRALIA AND NEW ZEALAND

Australia

Adelaide	327,686
Brisbane	295,430
Hobart	52,600
Melbourne	975,160
Newcastle	102,550
Perth	159,778
Sydney	1,101,190

New Zealand

Auckland	206,810
Christchurch	123,370
Dunedin	84,060
Wellington	130,120

AREA AND POPULATION OF STATES AND POSSESSIONS OF THE UNITED STATES

POPULATION ACCORDING TO PRELIMINARY FIGURES, CENSUS OF 1930

	SQ. MILES	POPULATION
Alabama	51,998	2,645,297
Arizona	113,956	435,833
Arkansas	53,335	1,853,981
California	158,297	5,672,009
Colorado	103,948	1,035,043
Connecticut	4,965	1,604,711
Delaware	2,370	238,380
District of Columbia	70	486,869
Florida	58,666	1,466,625
Georgia	59,265	2,902,443
Idaho	83,888	445,837
Illinois	56,665	7,607,684
Indiana	36,354	3,225,600
Iowa	56,147	2,467,900
Kansas	82,158	1,879,946
Kentucky	40,598	2,623,668
Louisiana	48,506	2,094,496
Maine	33,040	800,056
Maryland	12,327	1,629,321
Massachusetts	8,266	4,253,646
Michigan	57,980	4,842,280
Minnesota	84,682	2,566,445
Mississippi	46,865	2,007,979
Missouri	69,420	3,620,961
Montana	146,997	536,332
Nebraska	77,520	1,378,900
Nevada	110,690	90,981
New Hampshire	9,341	465,293
New Jersey	8,224	4,028,027
New Mexico	122,634	427,216
New York	49,204	12,619,503
North Carolina	52,426	3,170,287
North Dakota	70,837	682,448
Ohio	41,040	6,639,837
Oklahoma	70,057	2,391,777
Oregon	96,699	952,691
Pennsylvania	45,126	9,640,802
Rhode Island	1,248	687,232
South Carolina	30,989	1,732,567
South Dakota	77,615	690,755
Tennessee	42,022	2,608,759
Texas	265,896	5,821,272
Utah	84,990	502,582
Vermont	9,564	359,092
Virginia	42,627	2,419,471
Washington	69,127	1,561,967
West Virginia	24,170	1,728,510
Wisconsin	56,066	2,930,282
Wyoming	97,914	224,597
POSSESSIONS		
Alaska	590,884	58,758
Guam	210	18,521
Hawaii	6,449	368,336
Panama Canal Zone	527	39,467
Philippine Islands	115,026	11,921,600*
Porto Rico	3,435	1,543,913
American Samoa	77	10,055
Virgin Islands	132	22,012

* 1928 estimate.

POPULATION OF LARGEST CITIES IN COUNTRIES OF THE AMERICAS

NORTH AMERICA

Canada

Calgary	65,513
Edmonton	65,163
Halifax	58,372
Hamilton	120,945
London	61,867
Montreal	684,500
Ottawa	119,254
Quebec	126,000
St. John	47,166
Toronto	556,691
Vancouver	117,217
Victoria	38,727
Winnipeg	191,356

Central America

Guatemala	115,938
León	48,000
Managua	50,000
Panama	60,000
San José	51,000
San Salvador	82,000
Santa Ana	70,000

Mexico

Aguascalientes	57,000
Guadalajara	140,000
León	64,000
Merida	63,000
Mexico	906,063
Monterrey	85,000
Puebla	110,000
San Luis Potosí	90,000

United States *

Akron, O.	253,653
Atlanta, Ga.	270,367
Baltimore, Md.	805,753
Birmingham, Ala.	257,657
Boston, Mass.	787,271
Buffalo, N. Y.	573,070
Chicago, Ill.	3,375,329
Cincinnati, O.	449,331
Cleveland, O.	900,430
Columbus, O.	289,056
Dallas, Tex.	260,397
Dayton, O.	200,225
Denver, Colo.	287,644
Detroit, Mich.	1,573,985
Flint, Mich.	156,422
Fort Worth, Tex.	160,892
Grand Rapids, Mich.	168,650
Hartford, Conn.	163,818
Houston, Tex.	289,579
Indianapolis, Ind.	364,073
Jersey City, N. J.	315,642
Kansas City, Mo.	399,484
Los Angeles, Calif.	1,233,561
Louisville, Ky.	307,808
Memphis, Tenn.	252,049
Milwaukee, Wis.	572,557
Minneapolis, Minn.	464,753
Nashville, Tenn.	153,153
Newark, N. J.	442,842
New Haven, Conn.	162,650
New Orleans, La.	455,792
New York, N.Y.	6,981,927
Oakland, Calif.	284,213
Oklahoma City, Okla.	185,383
Omaha, Nebr.	214,175
Philadelphia, Pa.	1,964,430
Pittsburgh, Pa.	669,742
Portland, Oreg.	301,890
Providence, R. I.	252,386
Richmond, Va.	182,883
Rochester, N. Y.	325,019
St. Louis, Mo.	822,032
St. Paul, Minn.	271,418
San Antonio, Tex.	254,562
San Francisco, Calif.	637,212
Seattle, Wash.	365,518
Syracuse, N. Y.	207,007
Toledo, O.	290,803
Washington, D.C.	486,869
Worcester, Mass.	196,837
Youngstown, O.	170,004

West Indies

Camagüey	44,000
Habana	580,946
Kingston	62,707
Matanzas	44,000
Port au Prince	125,000
San Juan	71,443
Santiago de Cuba	63,000
Santo Domingo	35,000

SOUTH AMERICA

Argentina

Buenos Aires	2,000,000
Córdoba	140,000
La Plata	150,000
Rosario	250,000
Santa Fe	150,000
Tucumán	100,000

Bolivia

La Paz	110,000
Oruro	39,000
Sucre	30,200

Brazil

Belem	236,500
Porto Alegre	179,500
Recife	239,000
Rio de Janeiro	1,715,362
São Paulo	579,000
São Salvador	284,000

Chile

Antofagasta	52,000
Concepción	64,000
Santiago	507,500
Valparaiso	183,000

Colombia

Barranquilla	81,500
Bogotá	166,167
Cartagena	86,000
Medellín	87,000

Ecuador

Guayaquil	100,000
Quito	90,000

Guiana

Cayenne	13,936
Georgetown	57,063
Paramaribo	45,703

Paraguay

Asunción	70,000

Peru

Arequipa	55,000
Callao	47,000
Lima	177,000

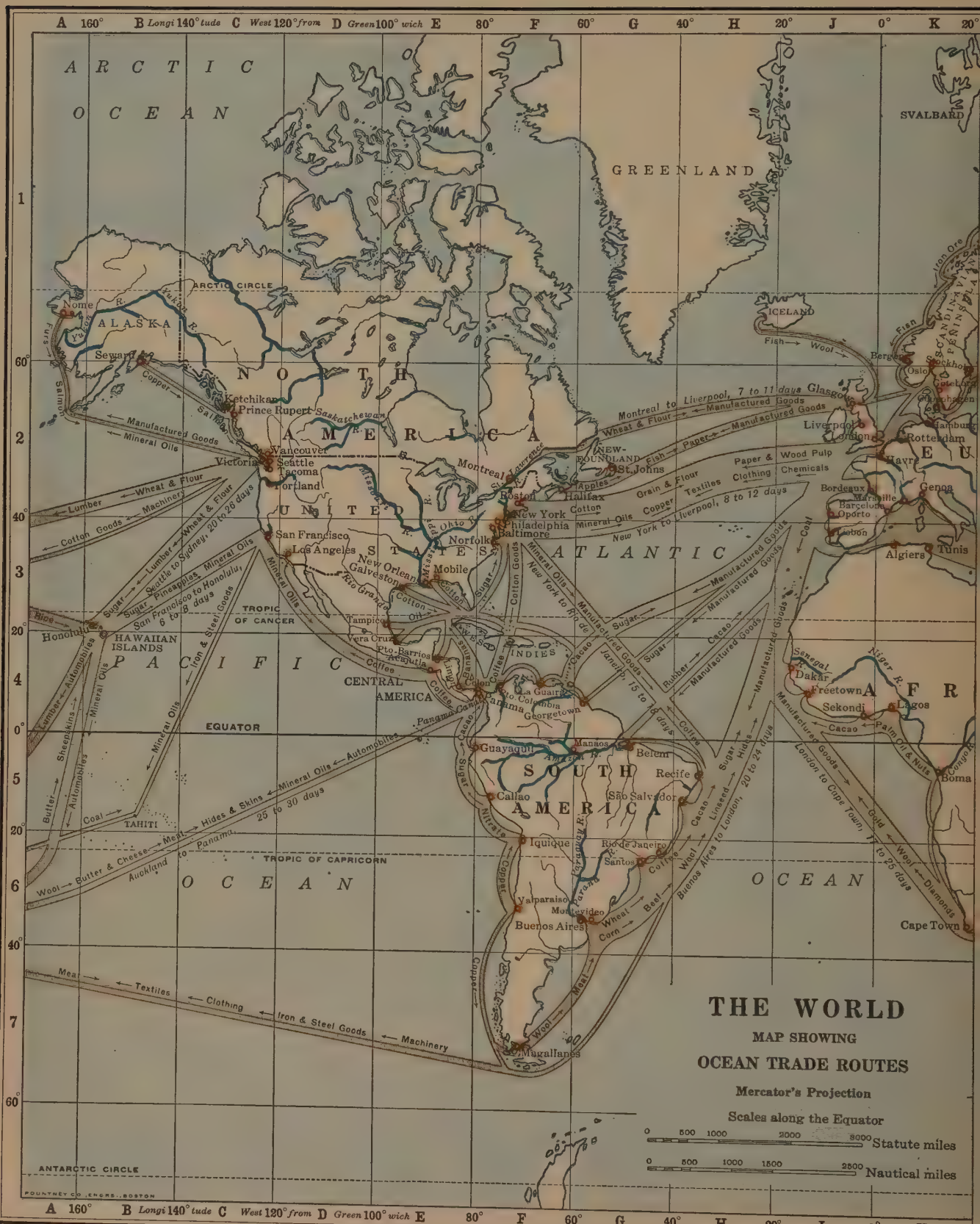
Uruguay

Montevideo	418,000

Venezuela

Caracas	135,253
Maracaibo	74,767
Valencia	37,000

* Preliminary figures, 1930 census.



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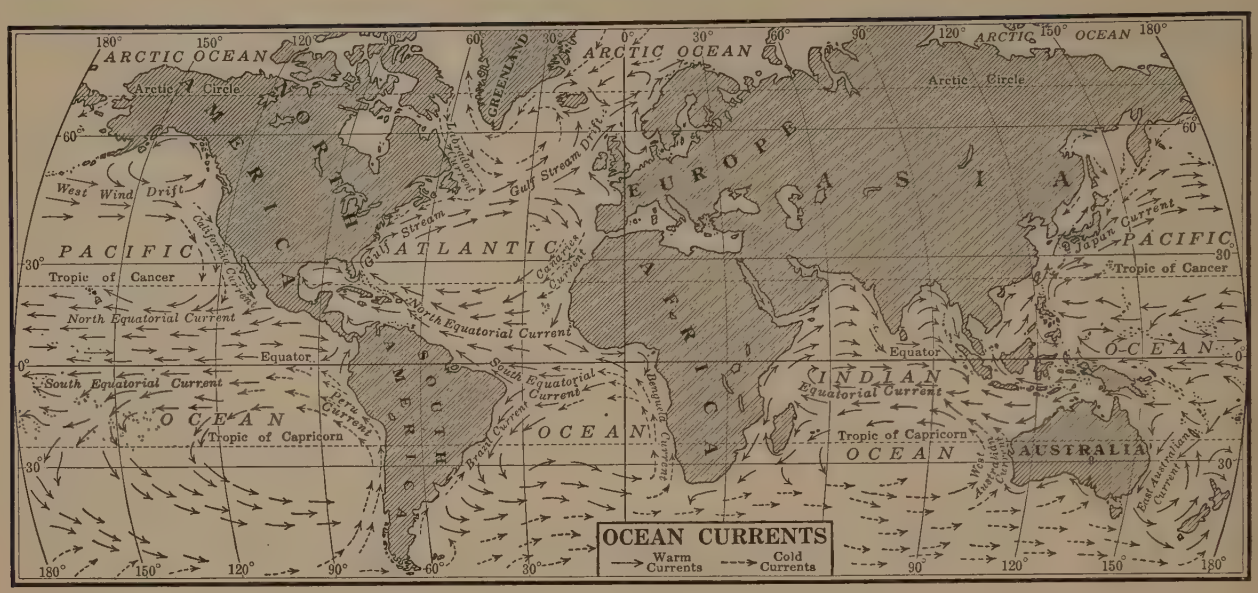

A map of the world showing ocean currents.

A LIST OF BOOKS FOR OUTSIDE READING

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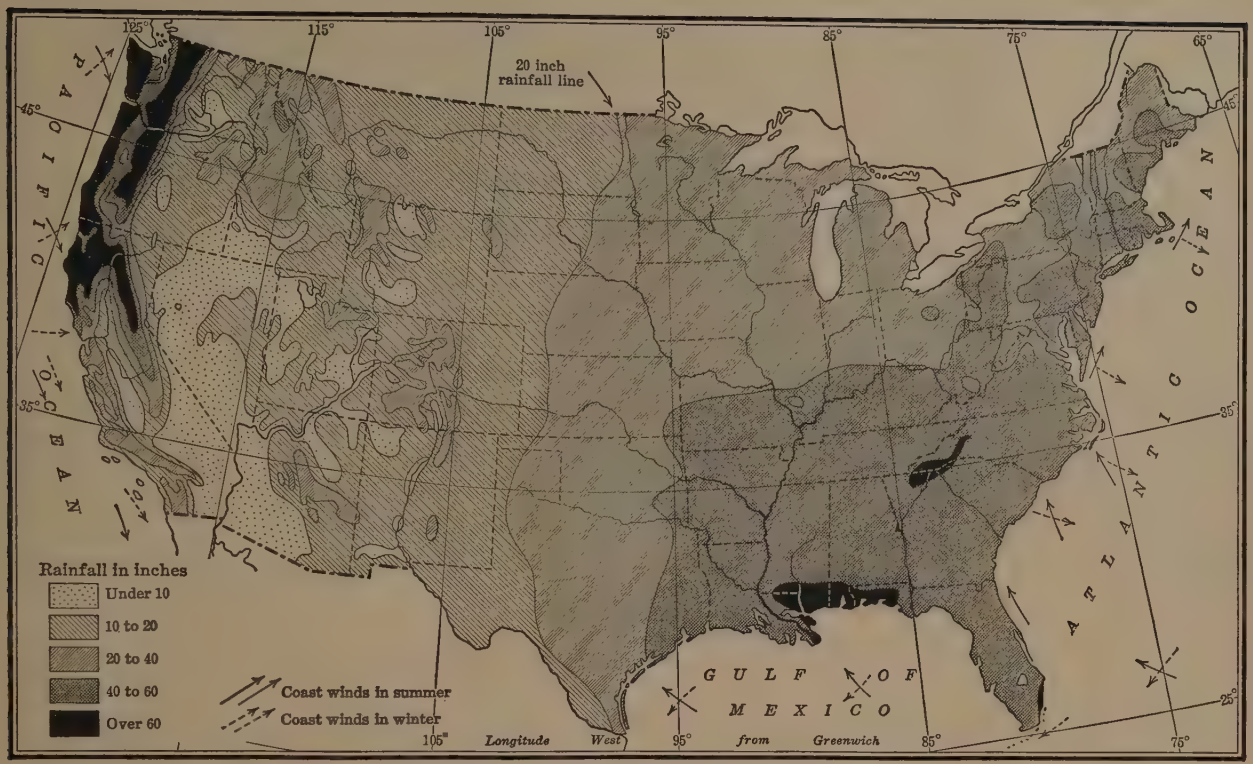
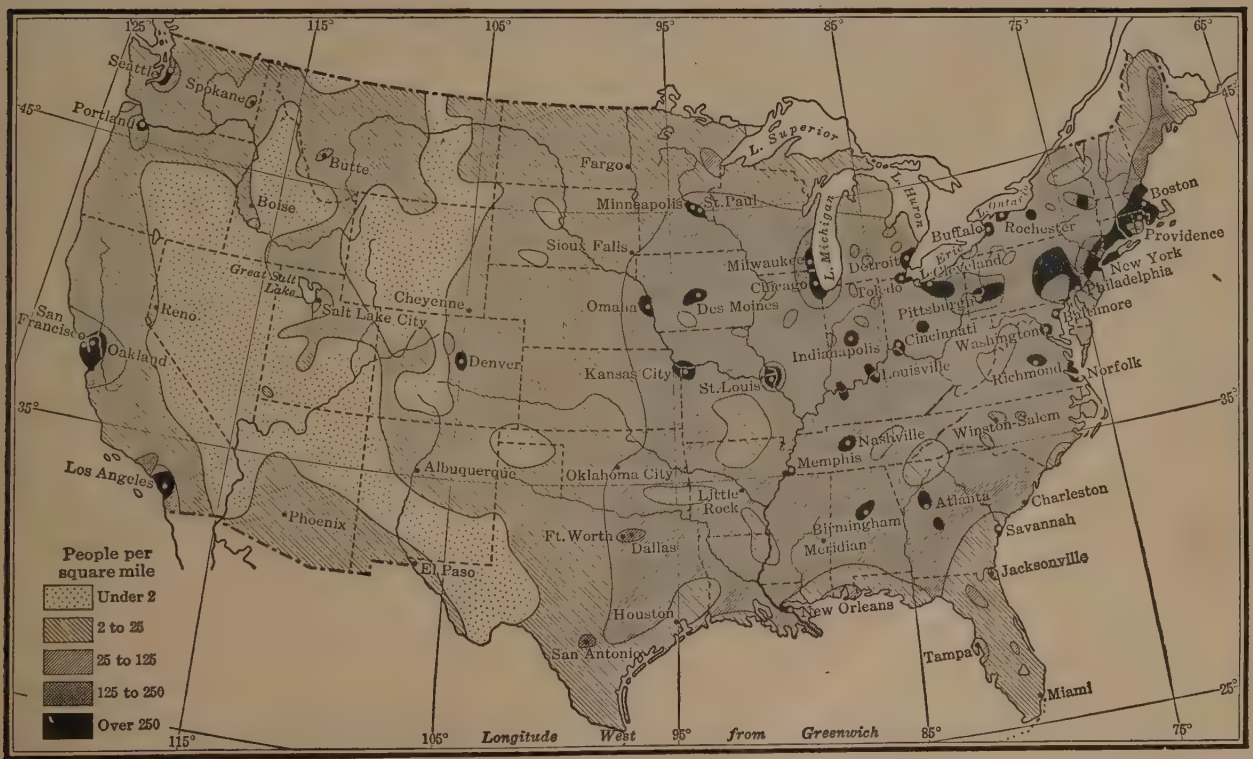
MIRZA, YOUEL B. Myself when Young — a Boy in Persia. Doubleday, Doran and Company.
MOCKLER-FERRYMAN, A. F., and THOMSON, M. PEARSON. Norway and Denmark. The Macmillan Company.
ROOSEVELT, THEODORE. African Game Trails. The Century Company.
SCOTT, EVELYN and C. KAY. In the Endless Sands (Sahara Desert). Little, Brown and Company.
TOWLE, GEORGE M. Marco Polo, his Travels and Adventures. Lothrop, Lee and Shepard.
YOUNG, ERNEST, and NORBURY, EDWARD A. Siam. The Macmillan Company.



Distribution of rainfall in the United States.



Distribution of people in the United States.

Map Plate, Patented July 5, 1921 • Method of Making Maps, Patented July 5, 1921

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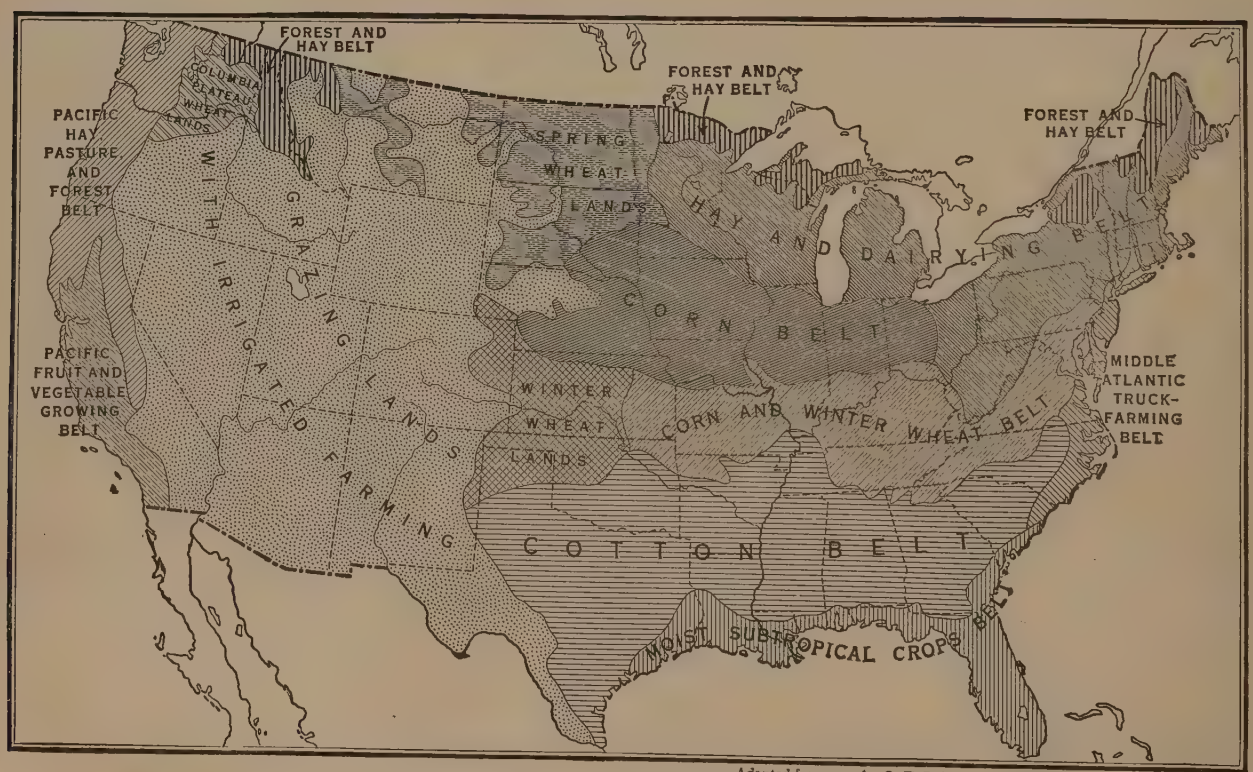
Under 90 days (under 3 months)
90 to 120 days (3 to 4 months)
120 to 150 days (4 to 5 months)
150 to 180 days (5 to 6 months)
180 to 210 days (6 to 7 months)
210 to 240 days (7 to 8 months)
Over 240 days (over 8 months)
200 DAYS
Longitude West from Greenwich

Length of growing season in the United States.


FOREST AND HAY BELT
FOREST AND HAY BELT
FOREST AND HAY BELT
PACIFIC HAY PASTURE AND FOREST BELT
COLUMBIA PLATEAU WHEAT LANDS
SPRING WHEAT LANDS
HAY AND DAIRYING BELT
GRAZING LANDS WITH IRRIGATED FARMING
CORN BELT
PACIFIC FRUIT AND VEGETABLE GROWING BELT
WINTER WHEAT LANDS
CORN AND WINTER WHEAT BELT
MIDDLE ATLANTIC TRUCK-FARMING BELT
COTTON BELT
MOIST SUBTROPICAL CROPS BELT

Adapted from map by O. E. Baker of U. S. Bureau of Agricultural Economics

Agricultural regions of the United States.

INDEX AND PRONOUNCING WORD LIST

KEY. ā as in āle; ă as in ăm; å as in senåte; â as in câre; à as in àsk; ä as in ärm; ă as in ăccount; à as in sofà; ē as in ēve; ĕ as in ĕnd; ê as in êvent; ẽ as in makẽr; ĕ as in recĕnt; ī as in īce; ĭ as in ĭll; ō as in ōld; ŏ as in ŏdd; ô as in ôbey; ô as in ôrb; ŏ as in sŏft; ŏ as in cŏnnect; ū as in ūse; ŭ as in ŭp; ů as in ůnite; û as in ûrn; ŭ as in circŭs; ü as in menü; o͝o as in fo͝od; o͝o as in fo͝ot; oi as in oil; ñ as ny in canyon; ŋ as in iŋk; N as in boN; K as ch in German ich; th as in then; ʧ as in naʧure; ' as in evil (ē'v'l)

NOTE. Map references are given thus: *161*, F 4. The number in italic type, *161*, = the map page; F 4 = the letter and number on the margins of the map. The F refers to the area between two meridians of longitude, and the 4 refers to the area between two parallels of latitude. The letter and the figure are to be used as guides in locating the place.

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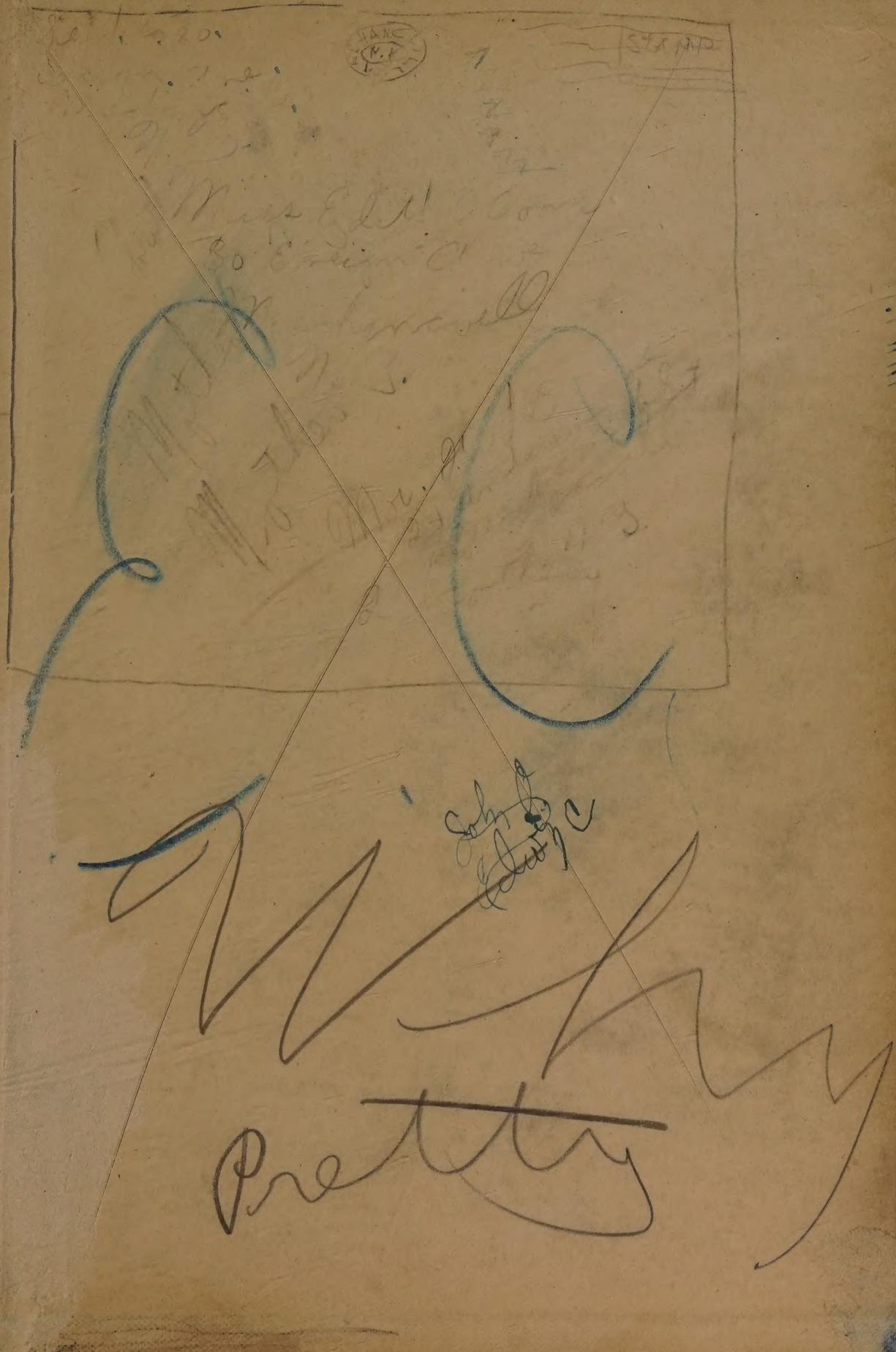
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